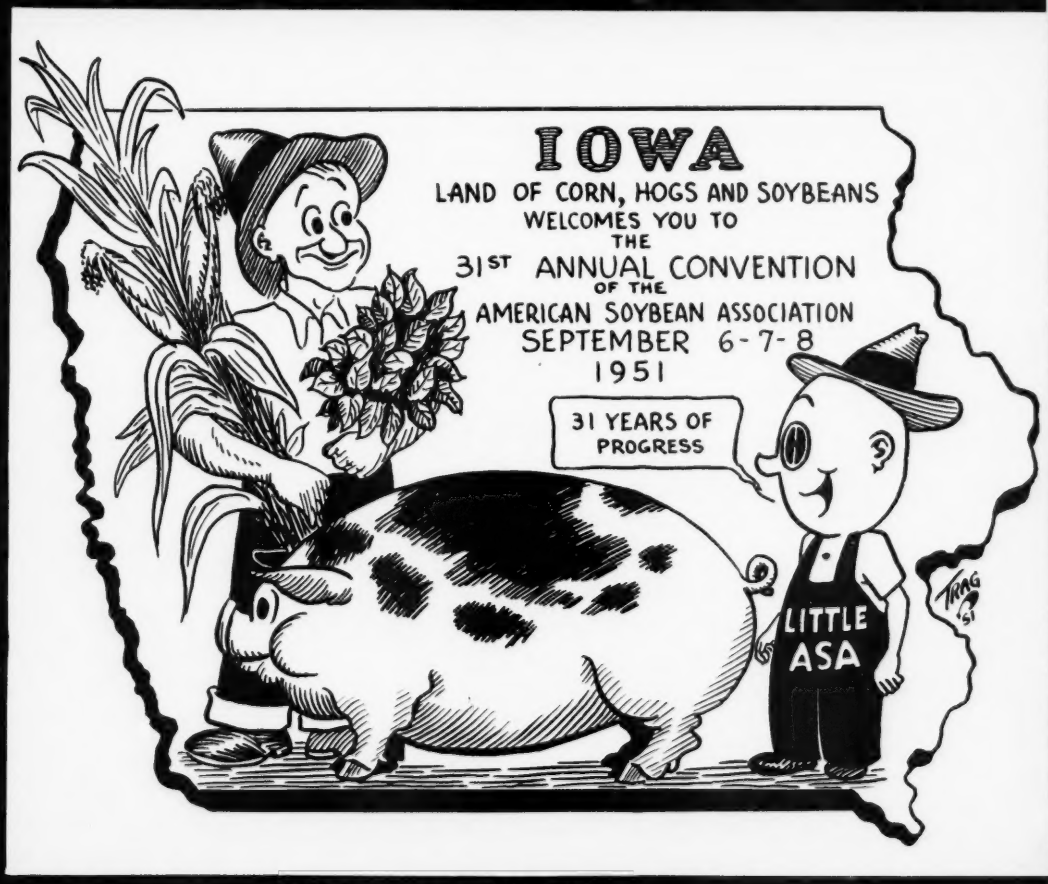
THE Soybean Digest

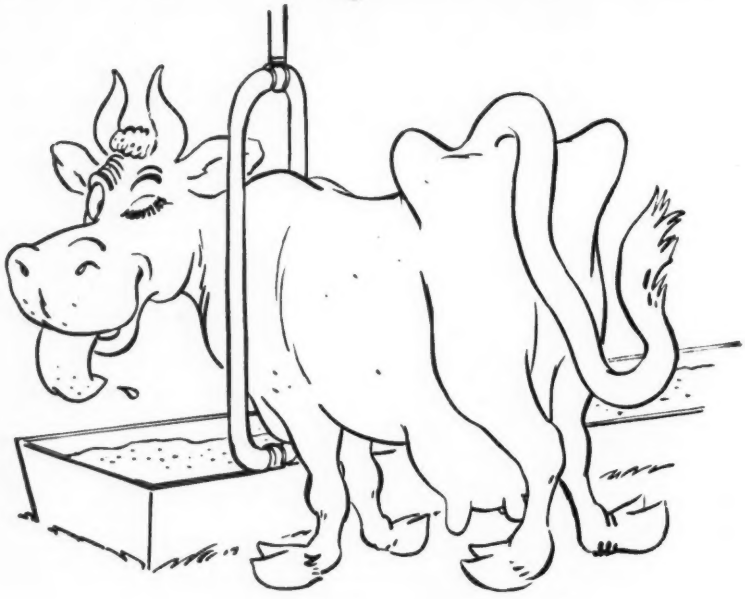


Official Publication

AMERICAN SOYBEAN ASSOCIATION

VOLUME 11 • NUMBER 10 AUGUST • 1951

No Off-flavor meal with Phillips Hexane



COWS LICK their chops plenty over cattle feed that's processed with Phillips *66* Normal Hexane. There's no foreign taste or odor, no heavy residue left in the meal, when the oil is extracted by this excellent Phillips solvent.

Phillips *66* Normal Hexane has a typical boiling range of only 5 degrees. No light ends to lose. And Phillips has adequate supplies. You can depend on prompt, sure deliveries.

Fine-quality Phillips Hexane and other select hydrocarbon solvents can be used successfully for the soybean, cottonseed, flaxseed, tung nut, rice bran, corn germ, castor bean, alfalfa, animal fat and other oil extraction industries. Write for complete information.

PHILLIPS PETROLEUM COMPANY

BARTLESVILLE, OKLAHOMA

THE Soybean Digest

REG. U. S. PAT. OFF.

HUDSON, IOWA

Business, publication and circulation offices, Hudson, Iowa. Editor, Geo. M. Strayer. Managing Editor, Kent Pellett. Business Manager, Geo. McCulley. Director of Circulation, Gene Taylor.

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THE AMERICAN SOYBEAN ASSOCIATION

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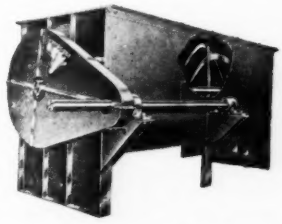

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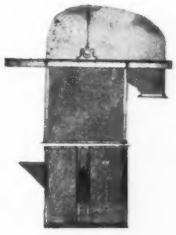

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EDITOR'S DESK

It Should Be a Lively Session

The present federal grades on soybeans are inadequate. They do not represent soybean values, as established by the value of the end products of processing. They were first established for carbohydrate crops, were adapted to the trading needs of those commodities. They do not reflect soybean values, should be so changed that they do give a measure of the worth of the two commodities produced when the soybean is processed.

Domestic processors have learned to use them as a guide, and to apply discounts for soybeans coming from certain territories or carrying certain factors. They have learned which territories produce the soybeans giving greater oil yields, which territories send to market high moisture and high foreign material crops. They buy accordingly.

The buyer for export can not do so. He must take what he gets, based on federal grades. He does not like what he has been getting. He has resumed buying Manchurian soybeans because he likes the quality better. Figures reaching us recently indicate shipments of 6½ million bushels of Manchurian soybeans through the Suez Canal during the first four months of 1951. Shipping space is said to be already contracted covering 500,000 tons of Manchuria's 1951 crop. *Perhaps we have already lost the European Market.*

A half-day session on the 31st annual American Soybean Association convention program is going to be devoted to this subject. We hope it will be one of the most interesting, lively and controversial subjects considered on our convention programs in many moons. Representatives of foreign buyers, handlers for export, the grading agency, the Office of Foreign Agricultural Relations and an economist have been invited to participate. Be on hand on Monday afternoon, Sept. 6 to get the full story. It will be worth your while.

They'll Hear from the Growers

The new price stabilization bill is described in detail in the "Washington Digest" section of this issue. Differing somewhat from the law in effect during the past year, it will take some time to learn all the details after legal interpretations have been made, the intent of Congress has been established.

Basically, there seem to be no great differences from the previous law, so far as soybeans are concerned. There will be some adjustments in price differentials between Chicago and country points, but those would have come under the previous law. Prices, apparently, will not be materially affected, as soybeans, soybean oil and soybean oil meal are all selling well below the ceilings.

Interpretation of the law, and the establishment of trade practices and margins, will still be in the hands of the soybean industry advisory committee to OPS. That committee will meet again before the new crop moves, will make the decisions on regulations. In actuality, it will make suggestions, which may or may not be carried out by OPS employees.

Last month we pointed out the desirability of representation on that committee from soybean growers. Further protests and representations have been made to OPS officials, and the matter has been called to the attention of Midwest Congressmen and Senators by letter. As yet there has been no action by OPS officials and no move toward representation from growers on the committee.

We realize there has been much uncertainty over the status of OPS. Until Congress acted there was no certainty about the form in which controls would be continued. There has been an exodus of key OPS officials from Washington, for administration of ceiling prices in a period when price levels have been moving downward, and when clearance sales and inventory reductions have been in vogue, has not been a particularly glamorous job.

It has now been established that a form of OPS will be with us during the next year. In a period of living from crisis to crisis there is no certainty of what tomorrow may bring. It could bring high prices—high enough to touch ceilings on soybeans. Our industry should supply adequate membership and assistance to the OPS advisory committee, so that if the need for ceiling prices ever arises we will be ready.

As we pointed out last month, membership on the present committee is not representative. If the present committee is to consider price ceilings on soybeans, then producers of soybeans *must* be represented. If it is to consider prices on soybean oil and oil meal *only*, then the present membership is adequate, for processors and buyers are already represented.

One representative from growers *is not* adequate. Growers produce more bushels of soybeans than are bought or processed. They should have *at least as many* members on the committee as processors or handlers. Until such representation is granted we are going to howl to the powers-that-be. Furthermore, we are going to say "*I told you so*" in no uncertain terms when the inevitable fumbles are made. Growers of soybeans have thousands of votes where processors have one, or where handlers have ten. We will make it our job to see that they are exercised until the soybean grower is heard at the council table.

Most States Will Be Represented

It has been eight years since the American Soybean Association convention was last held in Iowa. The second largest producer of soybeans in the nation, the state of Iowa offers the visitor much to see in agricultural production. We hope you plan to stay long enough to look around, see more than Des Moines and Ames.

With two days devoted to business meetings and the formal sessions, and a third day devoted to a field trip to two of the farms maintained by one of the nation's leading agricultural colleges, this year's program promises to be well rounded and of interest to divergent groups. Registrations have already come in from over 20 states and a few foreign countries. If yours is not among them better send it in today.

At no other meeting during the coming year will you have an opportunity to hear so much about soybeans in so little time and with so little effort on your part. Take advantage of it. Make plans now to attend. And make your reservations for hotel accommodations. Complete program will be sent to all association members about two weeks before the convention dates.

A GREETING FROM
YOUR PRESIDENT

JOHN W. EVANS

ON TO DES MOINES

Welcome to Iowa: Beautiful Iowa; Fertile Iowa; Soybean-Minded Iowa.

Iowa, second in soybean production and highest state in the Union for percentage of tillable soil, welcomes the American Soybean Association to Des Moines for our convention.

The directors wish every member of the Association could be at the convention. Bring your neighbor.

Do we have growing pains? YES! Our opportunities for service to the Industry are rapidly increasing and our program is becoming more and more diversified and embracing.

Relations with Government, Foreign Trade, Exports, Imports, Marketing Inequalities, Legislation, Price Ceilings, Scientific Developments and even Transportation occupy our attention. Come and hear about them. Study the program.

Hope to see you there.

John W. Evans, President
American Soybean
Association

Montevideo, Minn.
Aug. 1, 1951.

31ST ANNUAL CONVENTION

American Soybean Association

Sept. 6, 7, 8 at Des Moines, Iowa

PROGRAM

(Tentative and subject to change.)

THURSDAY, SEPT. 6
Grand Ball Room
Hotel Fort Des Moines

9:30 a.m. .....John Evans, presiding

President American Soybean Association, Montevideo, Minn.

"Greetings from Des Moines," Mayor A. B. Chambers, Des Moines, Iowa.

"Iowa Welcomes You," Clyde Spry, Secretary of Agriculture, State of Iowa.

"Day Length and Soybean Maturity," H. A. Borthwick, senior plant physiologist, U. S. Department of Agriculture, Beltsville, Md.

"Research in the Development of Soybean Varieties," Dr. Martin G. Weiss, principal agronomist, division of forage crops and diseases, U. S. Department of Agriculture, Beltsville, Md.

"Soy Flour and Protein-Hungry People," speaker to be announced.

"Recent Research Developments on Soybeans at the Northern Regional Research Laboratory," Dr. J. C. Cowan, head oil and protein division, Northern Regional Research Laboratory, Peoria, Ill.

1:30 p.m. .....Chester B. Biddle, presiding

Vice President American Soybean Association, Remington, Ind.

"Soybean Grades Versus Soybean Values," Dr. V. I. West, department of agricultural economics, University of Illinois, Urbana, Ill.

"American Soybeans in European Markets," speaker to be announced.

"World Fats and Oils Supplies and American Soybeans," speaker to be announced.

"Federal Grades for Soybeans," speaker to be announced.

"Handling Exports Under the Present Grading Standards," speaker to be announced.

"Soybeans—the Feature Story," motion picture film prepared by the National Soybean Crop Improvement Council.

FRIDAY, SEPT. 7
Grand Ball Room
Hotel Fort Des Moines

9:30 a.m. John W. Evans, presiding

President American Soybean Association, Montevideo, Minn.

Annual business meeting, American Soybean Association.

10:30 a.m. ..Ersel Walley, presiding

Past President American Soybean Association, Fort Wayne, Ind.

"Safety Matters in Handling of Solvents," Dr. J. E. Jeffries, Penola Oil Co., Linden, N. J.

"Basic Protein Explorations with Soybeans," speaker to be announced.

Hotel Fort Des Moines offers all the needed facilities for a national convention.

Iowa State, one of the world's leading agricultural colleges, where the third day of the convention will be held.

There's recreation to be had in any of Iowa's large number of state parks.

"Britain's Oilseed Industry," C. G. Heywood, Pinchin, Johnson, Associates, London, England.

1:30 p. m. .....*Howard L. Roach, presiding*

Past President American Soybean Association, Plainfield, Iowa.

"Soybean Oil Meal, Antibiotics and Swine," Dr. Damon Catron, head swine nutritional research farm, Iowa State College, Ames, Iowa.

"Poultry Production and Soybean Oil Meal," Dr. Elton Johnson, poultry husbandry department, Iowa State College, Ames, Iowa.

"New Developments in Beef Feeding," Dr. Wise Burroughs, animal husbandry department and chemistry division, Iowa State College, Ames, Iowa.

"The Dairy Cow and Protein Supplies and Quality," speaker to be announced.

Remember the dates, Sept. 6, 7 and 8.

"Soybean Oil Meal in Formula Feeds," speaker to be announced.

5:30 p. m.

Cocktail party.

Grand Ball Room
Hotel Fort Des Moines

7:00 p. m.

Annual convention banquet.
Speaker to be announced.
Entertainment numbers.
Awarding of honorary life memberships.

Ladies Day Tour

10:00 a. m.

Leave Hotel Fort Des Moines for visit to Meredith Publishing Co.

12:00 noon

Leave for Hotel Savery for lunch with Betty Brady, feature commentator for Radio Station WHO and to take part in her broadcast, "Iowa Feature Fare."

2:00 p. m

Leave for Greenwood Park for visit to Des Moines Art Center.

SATURDAY, SEPT. 8
Iowa State Experiment Station
Ames, Iowa

9:00 a. m.

Leave Hotel Fort Des Moines for field trip to Iowa State Experiment Station.

10:00 a. m.

Arrive at Iowa State College agronomy farm for visit to soybean test plots, in charge of C. R. Weber, associate professor of farm crops, Iowa State College.

12:00 noon

Barbecue lunch at agronomy farm.

2:00 p. m.

Arrive at Iowa State College Swine Nutritional Research Farm. Tour in charge of Dr. Damon Catron, associate professor of animal husbandry, Iowa State College.

—s b d—

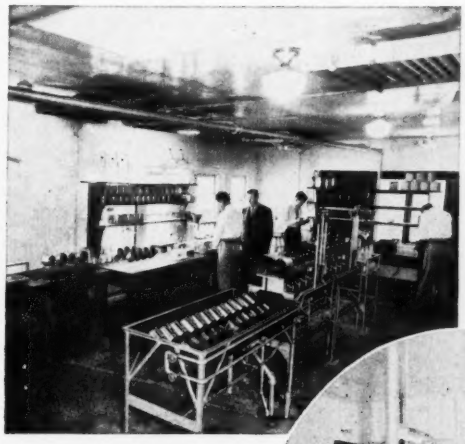
COTTONSEED FLOUR

The U. S. Department of Agriculture has entered into a contract with the Okmulgee Branch of Oklahoma A. & M. College, Okmulgee, Okla., to investigate the use of cottonseed flour in baked products. This contract will be supervised by the Southern Regional Research Laboratory.

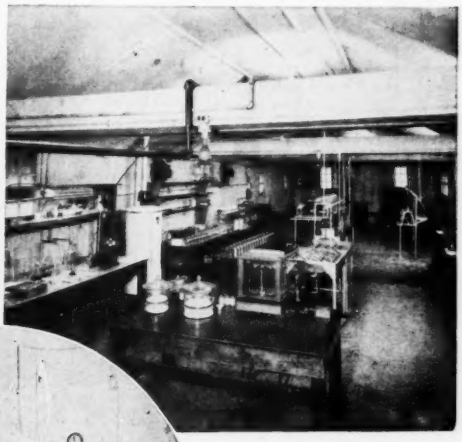
The Southern Laboratory, in cooperation with the cottonseed oil industry, the National Cottonseed Products Association, state experiment stations, and other agencies of the U. S. Department of Agriculture, has demonstrated experimentally that cottonseed meals of superior nutritive value can be produced in commercial mills.

Under the contract, the Okmulgee branch of Oklahoma A. & M. College will work out procedures incorporating this improved cottonseed meal, and other available cottonseed flours, in bread, rolls, cakes, sweet dough products, doughnuts, cookies and other baked foods.

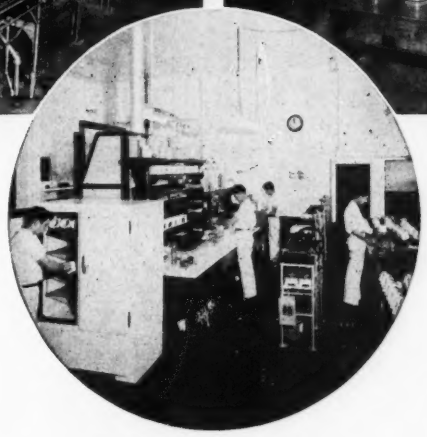
Serving The Soybean Industry



The Decatur, Ill., laboratory is equipped with the most modern equipment for refining soybean oils.



The Des Moines, Iowa, laboratory with all the latest equipment for refining oils.



The Oil Refining Department at the Memphis, Tenn., laboratory, with a capacity of 150 refinings daily.

6

Chemical Laboratories to serve you.

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- Des Moines, Iowa
- Memphis, Tenn.
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- Cairo, Ill.

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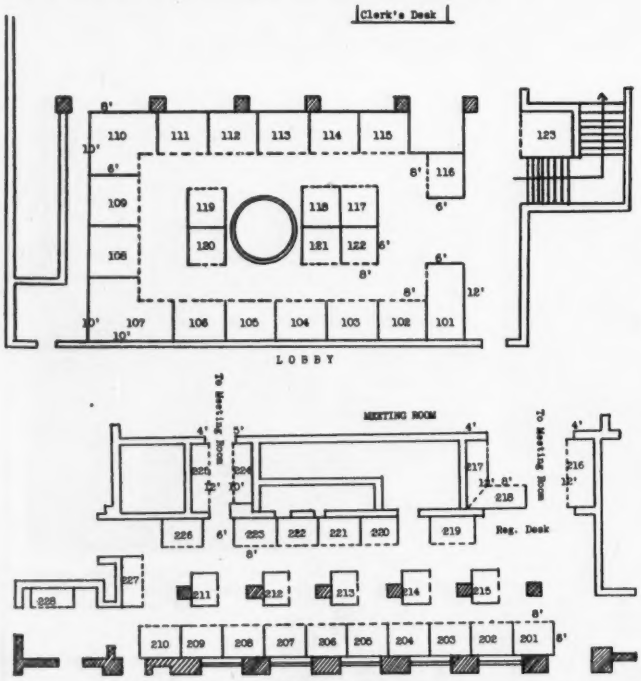

Diagram shows the exhibit booths in the lobby and on the mezzanine floor of the Hotel Fort Des Moines where the 31st convention of the American Soybean Association will be held. There you can meet old friends and make new ones. See below for list of exhibitors.

Here are the names of the exhibitors and their booth numbers as you will find them in Hotel Fort Des Moines.

A few exhibit booths still were available at press time. You may be able to obtain one if you write, wire or phone George McCulley, business manager of the American Soybean Association, Hudson, Iowa.

LOBBY

101, 102—A. T. Ferrell & Co., Saginaw, Mich.

103—National Soybean Crop Improvement Council, Decatur, Ind.

104—French Oil Mill Machinery Co., Piqua, Ohio.

107—U. S. Rubber Co., Naugatuck, Conn.

110—Albert Dickinson Co., Chicago, Ill.

115—American Mineral Spirits Co., Chicago, Ill.

116—Buhler Bros., Inc., Port Lee, N. J.

117, 122—Penola Oil Co., Detroit, Mich.

123—Seedburo Equipment Co., Chicago, Ill.

MEZZANINE

201, 202—Blaw-Knox Co., Pittsburgh, Pa.

203—Corn States Hybrid Service, Des Moines, Iowa.

204—Tillotson Construction Co., Omaha, Nebr.

205—Prater Pulverizer Co., Chicago, Ill.

206—Dave Fischbein Co., Minneapolis, Minn.

207—Butler Manufacturing Co., Kansas City, Mo.

209—The Soybean Digest, Hudson, Iowa.

211—A. O. Smith Corp., Milwaukee, Wis.

212—Merrill Lynch, Pierce, Fenner & Beane, Des Moines, Iowa.

213—J. C. Kintz Co., Cedar Rapids, Iowa.

214—Archer-Daniels-Midland Co., Minneapolis, Minn.

215—William H. Banks Warehouses, Inc., Chicago, Ill.

216—Burrows Equipment Co., Evanston, Ill.

218—Globe Machinery & Supply Co., Des Moines, Iowa.

219—R. R. Howell Co., Minneapolis, Minn.

220—V. D. Anderson Co., Cleveland, Ohio.

221—Electrical Engineering & Equipment Co., Des Moines, Iowa.

222—Des Moines Bag Co., Des Moines, Iowa.

223—National Association of Margarine Manufacturers, Washington, D. C.

226—Urbana Laboratories, Urbana, Ill.

Convention Notes

Better get that hotel reservation without further delay if you have not already done so. Make it direct with Hotel Fort Des Moines, Des Moines, Iowa.

Be sure to let them know that your reservation is for the American Soybean Association convention Sept. 6-8. That way your room will be taken from the convention block.

If the rooms are all gone at the Fort Des Moines you will be placed in a good hotel nearby.

* * * *

Since your staff lives in Iowa, we find it exceedingly hard to restrain ourselves from bragging about the state and the large number of ways in which it excels all other states.

Iowa is only *second* in soybean production. Heaviest-producing area is the north central part. But you are almost certain to see some good soybean fields, whichever way you come into the state.

Doing some vacationing on the side when you come to the convention? Iowa has an outstanding system of state parks. There will probably be one along your route well worth a few hours of your time—where you can swim, fish, boat or just plain loaf in pleasant cool surroundings.

* * * *

Don't forget that Des Moines has two big soybean processing plants, Spencer Kellogg & Sons, Inc., and the Swift & Co. soybean mill. Swift is erecting a new feed mixing plant in connection with its soybean mill.

* * * *

Soybean grades and grading will receive major attention during one convention session, when representatives of foreign buyers, governmental grading agencies, export shippers and local buyers will participate in a symposium on the subject. Loss of our export market would be a major catastrophe, hence the attention on high-foreign-material and split-bean contents at this meeting.

Again GANO *Specifies* COLUMBIAN for Dependable Low-Cost Storage!

* Gravity system of grain handling is one of the many features incorporated in the design below which materially reduces cost of operation.

The all-steel elevator at Cunningham, Kansas, as shown at right, is one of four recently erected by the Gano Grain Corporation. The four bolted steel storage tanks — plus the three tanks with steel hopper bottoms which are over the truck dump pit, and the headhouse were furnished by Columbian. Columbian Storage Tanks were also used for the three other new Gano elevators at Lewis, Kinsley and Doolan, Kansas. The Gano Company has used Columbian Bolted Steel Grain Storage Tanks for many years at their various locations.

Users everywhere invariably specify "COLUMBIAN" when additional storage is needed — or new plants constructed. Because — minimum initial investment, and minimum overhead and maintenance means increased daily profits. Because — additional economy of low-cost erection due to bolted sectional construction.

COLUMBIAN
BOLTED STEEL GRAIN STORAGE TANKS

Columbian Bolted Steel Grain Storage Tanks are ideal for economical storage of all small grain — wheat, corn, oats, barley, soya beans, cotton seed, peanuts, rice, coffee beans, etc. Hundreds are used by all kinds of feed processors. They are safe, fire-proof, weather-tight, rodent-proof. Never crack or crumble — no caulking or patching required. None has ever worn out or been demolished by tornado or cyclone.

EASY WAYS TO ERECT — Detailed, easy-to-understand blue prints for erection are furnished so that tanks may be put up with any kind of labor — or we will provide supervisor for your own men — or a complete Columbian erection crew. Foundation specifications and blue prints are furnished to enable your local concrete contractor to build foundation. WRITE now for complete information and details of our free engineering service.

COLUMBIAN STEEL TANK CO., P. O. Box B-4226, Kansas City, Mo.

Associate Member of the Grain and Feed Dealers National Association

GROWERS

Combining Cost

There are about three ways in which a landlord and tenant can settle up now at the end of the year on the cost of combining soybeans. In east-central Illinois most landlords pay half the combining cost.

Briefly, that's the answer of J. B. Cunningham, University of Illinois farm tenancy specialist, to a question concerning what the customary rate for combining is and whether it is paid on total acreage or only half.

When landlords pay half the combining cost, some pay the usual rate —about $4 an acre—for their half, while others pay $1 to $1.50 an acre combined.

Another arrangement is for the tenant to do the combining while the landlord furnishes the seed.

A third method, used by a few tenants, is for tenants to furnish both seed and combining and then receive three-fifths or two-thirds of the harvested crop.

As for paying for all or only half the acreage, Cunningham says that in general the entire acreage is considered. But you get the same result whether you figure total acreage times half the rate, or half the acreage times the full rate.

Illinois Varieties

Soybean varieties were tested on five state experiment station fields in Illinois in 1949.

Nine varieties were tested on the northern field at DeKalb, with Early Korean giving the highest yield of high-quality seed. During the five years 1945-49, Hawkeye, Richland and Mukden have been outstanding at DeKalb.

Eighteen varieties were tested in the central field at Urbana. Hawkeye, Adams, Dunfield, Illini, Richland and Early Korean all yielded over 40 bushels per acre under the experimental conditions.

Eighteen varieties were planted on the southwest field at Alhambra. Wabash, Chief, Carlin, Patoka and Gibson—all medium to late varieties —gave the best yields. Variety trials at Alhambra were discontinued with 1949.

Nine varieties were planted on the south-central field at Brownstown in 1949. These included: Wabash, Chief, Lincoln, Dunfield, Hawkeye, Macoupin, Carlin, Patoka and Keiffer. Whether there was a significant difference in yields between varieties at Brownstown was not calculated by the agronomists.

Fifteen varieties were tested in the extreme southern field at Dixon Springs. S-100 and Chief have performed especially well at this field.

For a complete report on the 1949 variety trials in Illinois see University of Illinois Circular 669, "Soybean Yields in 1949 Variety Trials." by R. F. Fuelleman, W. L. Burlison, C. H. Farnham, G. E. McKibben and P. E. Johnson, University of Illinois, Urbana, Ill.

Lack of Manganese

Austrian winter peas may be the answer for Coastal Plain farmers who have noticed manganese deficiencies in soybean, corn and peanut plantings, according to E. T. Batten, agronomist at the Tidewater Experiment Station, Holland, Va.

Batten reports research results which show that a winter cover crop of Austrian winter peas apparently corrected a lack of manganese in one season. The peas make an exceptionally good growth on soils of a high pH, and when the crop is plowed down in the spring, the organic matter added to the soil helps counteract the effect of over-liming. Batten says that manganese deficiency in Virginia is usually associated with over-liming.

The Austrian winter pea is a typical southern crop, and is recommended only for southern regions.

BOOKS

History of Corn

An early history of maize (corn) including corn in early Spanish America and the period when it was being introduced into Europe has been published in a handbound limited edition by Chronica Botanica Co. of Waltham, Mass., in cooperation with Missouri Botanical Garden.

The work was done by John J. Finan under a grant from Pioneer Hi-Bred Corn Co., Des Moines, Iowa, and was originally presented as a master's thesis at Washington University.

The author consulted the works of the Renaissance herbalists for his information. A number of early woodcut illustrations including the first drawing of maize published in Europe are included.

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MAIZE IN THE GREAT HERBALS. By John J. Finan. The Chronica Botanica Co., Waltham 54, Mass.; and Stechert-Hafner, Inc., New York City. Price $3.

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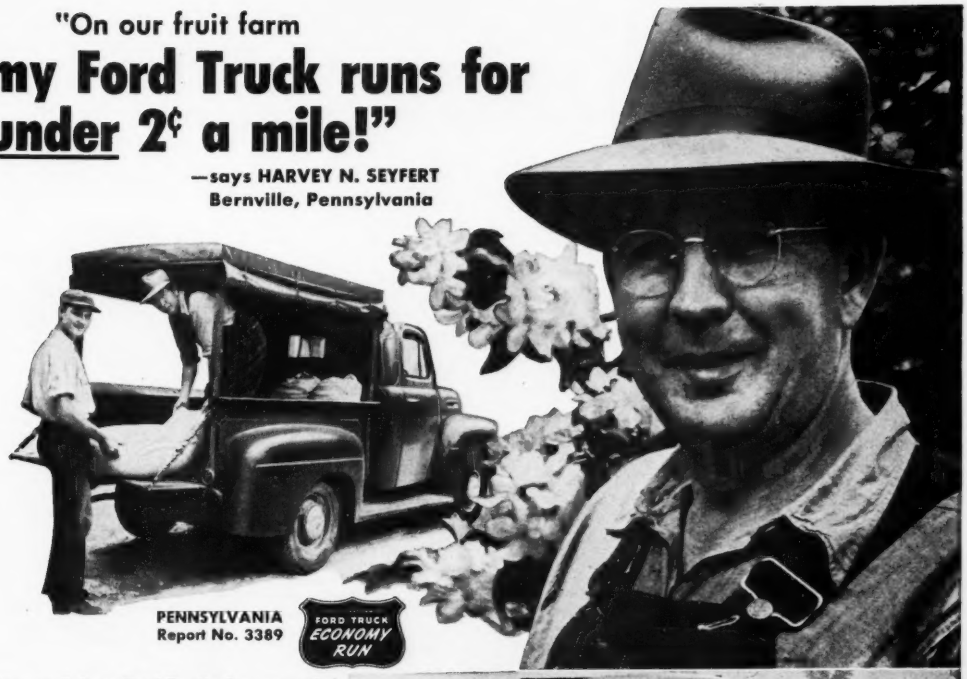

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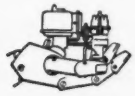

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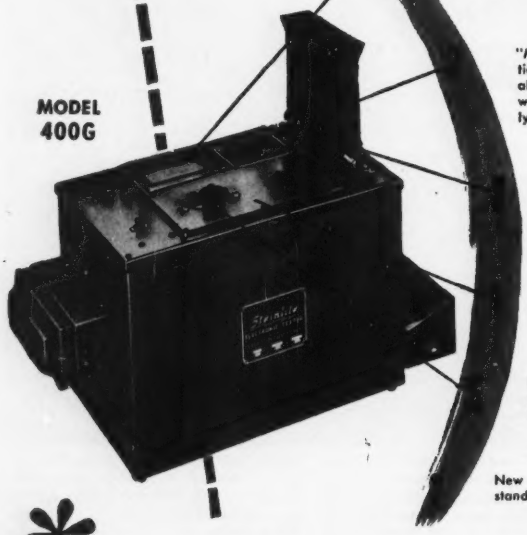

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You Can Do a Better Job of Combining

By HARRY C. SMITH

Field Engineer, The Massey Harris Co., Racine, Wis.

Both the soybean plant and the combine have been improved to make better harvesting possible. But much still depends on the operator.

MUCH HAS been done in the way of plant development and machine design to improve and simplify the harvesting of soybeans. But even so, there are problems that are peculiar to that particular plant when it comes to harvesting.

The soybean is by its nature easily threshed out of the pod. And the separation and cleaning part of the harvesting procedure is simple.

The real problem always has been that of cutting and feeding the crop into and through the harvester. The cutter bar and table of the combine were those parts of the machine that were given major attention in modifying the combine to operate on soybeans. Likewise, the operator will be well repaid to give these parts of the combine close attention, both in maintenance and operation.

Much can be done in seedbed preparation and crop cultivation to ease the burden on the cutting and feeding mechanism of the combine. A crop infested with weeds can tax the combine beyond its capacity, particularly the cutting and feeding mechanism. *A crop kept free of weeds will do more toward successful harvesting than any amount of machine adjustment or design.*

Referring again to combine maintenance and adjustment, look close to the maintenance and adjustment of the cutter bar and table (feeding mechanism). If there are any sickle sections that are dull or nicked, they should be replaced. If there are a number of such sections, it is better to install a new sickle.

Of course the ledger plates must also be sharp and the guards straight and in line. Then the sickle clips adjusted to hold the sickle sections close to the ledger plates. Some machines have shims under the clips to make this setting. If they do not, they can be bent sufficiently. A good keen cutting sickle will reduce loss from shattering as well as preventing the sickle from clogging.

The Reel

The reel should be set close enough to the cutter bar that it will assist in keeping the cutter bar swept clean at all times and as far back as possible so as to prevent loss from shattering. At times the load on the reel will be rather heavy. Therefore, the reel drive mechanism should be in first class shape.

The coarse plant structure of soybeans taxes the feeder canvas. Broken canvas slats should be replaced. If the canvas is loose from the slats they should be secured with tacks. Holes or rips in the canvas should be patched. Any of these discrepancies may permit plant stalks to catch and cause further and extensive damage.

The table balance springs should be adjusted to sufficient tension to make for raising and lowering the table easily. The necessity for cutting very close to the ground when harvesting soybeans demands that the cutter bar quickly and easily be raised or lowered. If not, a compromising position will be selected of such height as to assure clearing the ground at all times. The result will be loss of seed because of the cutter bar passing above them. It is also a requisite that the lift lever or control be within easy reach of the operator.

With the weight of the table counterbalanced accurately either with springs or weights and the lift mechanism located within easy reach of the operator, the cutter bar can be kept in close proximity to the ground at all times without danger of the cutter bar dragging on the ground or the

opposite expediency of leaving some pods on the stubble.

Machine performance and capacity depend very considerably on good uniform machine feeding. Therefore, all those parts of the machine that have to do with feeding should be at their peak. The above discussed items pertain to those parts, hence the need for close observation of their condition and status. If you have not tried it, you will be surprised how much easier the table is raised and lowered if *every* working hinge and joint on the table and lift mechanism is lubricated.

Cylinder

A uniformly fed cylinder has no great chore in threshing the beans from the pod. The general instructions in the manufacturer's instruction book quite thoroughly describe the settings for average conditions as well as deviations to follow for abnormal conditions. Sufficient to say is that the properties of cylinder performance are of no great problem *provided* that the cylinder is fed evenly.

It must be acknowledged that the majority of the splitting or damaging of beans occurs while passing through the cylinder. Reduction of the cylinder speed to the lowest possible minimum is the better approach to minimum damage. Concave adjustment has some bearing on the results but cylinder speed is more effective. A well designed harvester is equipped with a cylinder drive that can be quickly and easily adjusted to change the cylinder speed. The alert operator can then select that cylinder speed most suitable for existing crop conditions. It is important to remember that the crop condition is constantly varying from morning, to mid-day, to evening, hence the need for a drive that is quickly and infinitely variable.

The separating mechanism (straw rack or walkers) is in much the same category as the cylinder in that if material is fed to it uniformly, it separates the beans from the straw quite readily. Again, the importance of uniform feeding. A congestion caused by uneven feeding is bound to make efficient separation more difficult.

Abnormal straw rack or walker losses can be reduced by reducing the speed in strokes per minute. Of course this reduction in strokes per minute reduces the "per hour" capacity of the separating mechanism. Consequently it is a "fielder's choice" between per-hour capacity and acceptable efficiency.

Because of their relatively high specific gravity and their streamlined shape, soybeans are easily cleaned. The cleaning process is mostly a matter of screen size selection for the cleaning mechanism (shaker shoe and fanning mill). Wind blast from the fanning mill can be relatively high either in volume or velocity without danger of loss. This makes for a clean sample. Like the straw rack, high shoe speed in strokes per minute can cause unnecessary losses. The inherent low cylinder speed naturally induces a small amount of chaff, hence the light load on the shoe, thus a high shoe speed is not needed to maintain normal capacity. A factor in cleaning is the presence of weeds that may bear seeds of the same size and/or specific gravity of soybeans. This presents a real problem because a selection of screen size or adjustment of shoe speed that will expel these seeds will expel some beans too. The answer to this problem is again seed-bed preparation and crop cultivation.

This brings up the controversial question of drilling versus row planting. Yield in bushels per acre from either process averages about the same but if planted in rows, the crop must be cultivated to control weeds whereas the thicker growth of beans when drilled tends to hold weed growth in check. A seedbed normally low in weed seed content may safely be drilled. True, crop production costs are higher if planted in rows *but the higher production costs are compensated for in lower harvesting costs as well as lower losses.* Also the practice will eventually reduce the weed seed content in the soil.

Referring again to seed damage, elevator carrier chains should be kept reasonably taut. A loose chain will permit beans to flow between the chain and sprockets where they will be crushed as the link completes its revolution around the sprocket. These carrier chains should be checked and adjusted every few days.

The end results desired are a sample of beans having no more than 10 percent damaged seeds; of a moisture content no greater than 12 percent; containing no more than 5 percent foreign matter in weight; and sustaining no more than 2 percent recoverable loss.

The capacity of a combine must be gauged not by its speed in miles per hour nor the bushels per hour of grain produced but by the tons of material passing through it per hour.

Be conservative. It saves crops and it saves machinery.

Pre-Harvest Drying of Soybeans[1]

By F. W. SLIFE

First asst. crop production, department of Agronomy, University of Illinois.

PREHARVEST drying is not a new process but its interest has been revived within recent years by the introduction of new chemicals for this purpose. In 1938 calcium cyanamid accidentally drifted onto wet cotton leaves, and actually this was the beginning of defoliation in cotton. This was not too important at that particular time because there were no cotton mechanical pickers. In the early '40's when the mechanical picker was introduced in the Cotton Belt, then the interest in cotton defoliation revived and calcium cyanamid was used extensively and still is today to defoliate cotton.

In the early '40's calcium cyanamid was tested rather thoroughly at most of the experiment stations as a soybean defoliant. Although tests did indicate that it would defoliate soybeans, it did not seem to have a practical use and, consequently, little of it was used on soybeans. From 1938 to 1948, calcium cyanamid was the only material sold commercially as a defoliant.

In 1948 several new liquid defoliants appeared on the market. With the introduction of these liquid defoliants interest in soybean defoliation has been revived and there have been some extensive tests during the last few years mainly with these liquid defoliants.

In the Cornbelt area there are few ground dusting machines for the application of powder defoliants, but there are many ground sprayers that have other uses and, therefore, if liquid defoliants have a practical value, there is enough ground equipment and air equipment to apply them. In 1948 the Delta Station of the University of Mississippi designed tractor fenders that would allow ground equipment to be used in crop defolia-

[1]Paper presented at the third annual Tri-State Soybean Conference of Processors and Agronomists at Urbana, Ill.

tion. In 1950 the University of Illinois agricultural engineering department developed tractor snouts or similar fenders for use on ground equipment in soybean defoliation. Therefore, going into the 1951 season, we do have defoliation chemicals for soybeans both powdered and liquid, and we do have suitable equipment for applying them both by air and by ground. Research programs have not indicated that soybean defoliation is going to be practical for general use. It would appear that in certain areas and in certain years it will prove to be very valuable.

Advantages

We might list some of the possible advantages of soybean defoliation in the order of their importance.

First of all we might be able to dry up green weeds to ease the combining of the beans. To us this seems to be a most important point in using soybean defoliants. Many green weeds do not die until frost but soybeans might mature earlier than this, and, if these defoliants will dry up the weeds, then undoubtedly combining could be done easier and perhaps earlier. Second, beans normally mature when fall rains are common; therefore, if we could speed up harvest this would be of particular importance in bottomland areas.

Third, in certain rotations we like to follow winter grain after soybeans. If we could speed up the harvest of the beans, we would be more certain of getting our fall grains planted at the right time.

The fourth possible advantage of soybean defoliation would be when the weather delays the maturity of the beans. Cool weather throughout the growing season in 1950 did delay the maturity of the soybeans until many areas were endangered from early frost damage. In situations like this, soybean defoliation might have a place.

The fifth and last reason would be that it might be possible to market beans a little bit earlier and possibly get a higher price before the bulk of the beans move to market. These seem to us to be the most important possible advantages of soybean defoliation.

Drawbacks

At this time we would also like to bring out some of the disadvantages of defoliation or some of the drawbacks. First of all, application of the defoliant is a very timely proposition. One of the first things that was learned in cotton defoliation was that the plant must be nearly mature if no yield reduction is to be expected. This is certainly true in soybeans. In our tests here at Illinois we have been able to speed up the harvesting of soybeans on the average of three to four days without reducing the yield. In some cases this has run up as much as one week without yield reductions. In any case where we have speeded up harvest by two weeks, then the yield has been reduced in some cases rather severely. Under normal conditions it would not appear that the gaining an average of three or four days would be too important. However, there are certain situations where some farmers would be willing to take a loss in yield in order to speed up the harvest of their soybeans.

Another disadvantage to defoliants is that they must be applied properly. Too much chemical may kill the leaf too hurriedly so that the layer does not form, and consequently the leaves will remain on the plant. In this case it would be worse than if no defoliation had been used. We apply the term "freezing" in this situation.

A third disadvantage of defoliation is that it has not proved to be effective where the fields are extremely weedy. In fields of this type it is almost impossible to get enough chemical down through the foliage to dry up either the weeds or to defoliate the soybeans.

Drying Weedy Fields

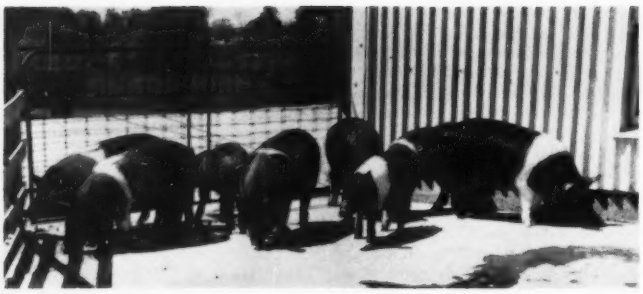
In summarizing this topic, I would say that chemical defoliation of soybeans or preharvest drying is going to be of some importance in certain areas in certain years. Its biggest use, as it appears now, will be for drying up weedy fields to facilitate harvesting. It undoubtedly will have some use in speeding up harvest of soybeans even though reduction in yield is expected. This would be true in areas that expect fall rains where getting the crop out early may save it altogether. Research at the present time does not indicate that soybean defoliation will be too important under normal conditions because if the harvest can be speeded up only an average of three to four days or even a week without reducing yield, then it may not be too important. One thing is certain in that more research is needed along these lines. Most of these new liquid defoliants have been used only two years and this certainly is not long enough to answer all the problems and to investigate their advantages.

The other topic that I would like to discuss briefly is the chemical weed control in soybeans. This is a very brief topic because at the present time there are no chemicals that can be used in growing soybeans for weed control without severely injuring or killing the soybeans. There is only one weed control feature that looks at all promising in soybeans and this is pre-emergent weed control. This means applying the chemical to the surface of the soil before the weeds or the beans emerge. This has proved successful in corn and we believe that it can be used on certain areas for this crop. But in soybeans the results have been quite variable although promising.

It would appear that the key to good results with pre-emergent sprays on soybeans depends entirely on the moisture supply in the soil. If there is too much moisture, the beans will absorb the chemical and reduced germination will result. When the soil is relatively dry and there is no rainfall between planting and the time the beans emerge, pre-emergent treatments will be successful. If a heavy rain should follow after treatment, there is very great likelihood that no beans will emerge.

Delaying treatment until just before emergence of the beans, or even when the first leaves are coming through the soil, will reduce the hazard of pre-emergent treatment, and if pre-emergent treatment is to be used it will probably be used in this manner. At the present time more research is needed with this type of treatment and it cannot be recommended as a standard practice for weed control.

Field of Gibson soybeans seven days after spraying with "Early Frost." Cockleburs were completely defoliated and harvesting was speeded up a full month. In the picture is Lloyd Hahn, president of Hahn, Inc., Evansville, Ind.



Can you see the difference? Note the uniformity and finish of the antibiotic-fed hogs on the opposite page. Their thrifty, smooth, glossy appearance marks them as what the farmer calls "good doing hogs." At an average age of 160 days, they averaged 227 pounds each across the packing house scales. They sold for 50 cents more a hundred pounds than other hogs sent to market on the same day. In contrast, the hogs at left are not uniform; some show reasonably good market finish while others are rough, runty and scaly. At 160 days of age, they averaged only 160 pounds each, and several of them did not even approach market finish. Proper use of antibiotics in otherwise good swine feeds cuts down the number of runt pigs—troublesome even to experienced farmers.

—Photos courtesy General Mills, Inc.

ANTIBIOTICS in AGRICULTURE

By DR. W. A. LAZIER

Director of Chemical Research and Development, Chas. Pfizer and Co., Inc., Brooklyn, N. Y., before conference of National Farm Chemurgic Council.

ALMOST EVERYONE is familiar with the story of Dr. Alexander Fleming's now famous discovery of penicillin; how in 1929 a stray mold spore floated in on the breeze, settled on a culture plate of bacteria and inhibited their growth; how Dr. Fleming correctly interpreted his observation and its possible value in the treatment of disease, thus ushering in the great penicillin development programs of the World War II period.

But penicillin is only one brilliant chapter in the story of the decade of antibiotics which followed the eventful early years of the war period. So rapid has been the pace that Baron's "Handbook of Antibiotics" published late in 1950 describes about 140 distinctly different antibiotics. Most of these are too toxic to be tolerated in the blood stream of animals and man, but can be considered candidates for other applications.

Since antibiotics are produced by molds and other microorganisms growing on nutrient media, the industry is quite dependent on farm products. Nutrient broths are based not only on mineral salts, cereals and sugars, but also require other growth promoting substances and extractives derived as by-products of the meat and milk processing industries.

Since animals and people are susceptible to rather similar diseases, one might suppose that the use of antibiotics in veterinary medicine would top all other uses of interest to the agriculturist. Due to a surprising discovery of very recent date, antibiotics are found to have a nutritional aspect that promises to eclipse even their important significance in animal medicine. When added in very small amounts to the rations of poultry, swine and young calves, several of the more important antibiotics promote growth in a manner not observed with any other chemical substances.

Antibiotic feed supplements were first offered for sale in 1950 and were immediately accepted by the feed industry, especially for inclusion in poultry rations. As a result, several of the leading pharmaceutical houses have gone into the feed supplement business, and all are hard pressed to supply the requirements of the rapidly expanding market.

Antibiotic feed supplementation is an outgrowth of animal protein factor (APF) supplementation. It is well known that proteins of wholly vegetable origin are nutritionally deficient for some species. At first, this was thought to be due solely to a lack or at least a maldistribution of essential amino acids. Animal protein from practically any source was found to correct the deficiency, but pure amino acids did not. Accordingly, it was realized that meat, and especially liver or fish scrap, contain a necessary nutrient for normal growth. For lack of a better term, the growth promoting substance was termed APF.

Beginning about three years ago, important new facts were brought to bear on the subject. Vitamin B-12 was isolated in pure form from liver and was found to give feeding responses similar to those observed with the APF-containing materials. Then vitamin B-12 was demonstrated to be present in the fermentation broths of several antibiotics, and the crude dried broth solubles, after removal of the bulk of the antibiotics present, were found to give APF (or vitamin B-12) responses when added to animal rations. Finally, it was found that in APF-free poultry rations, antibiotic fermentation solubles gave growth responses in excess of those obtainable with any concentration of added pure crystalline vitamin B-12. It looked like the residual antibiotic content of the fermentation solubles was responsible for the extra growth kick, and tests on rations prepared with pure vitamin B-12 and pure antibiotics proved this to be the case.

Four Recommended

The four antibiotics tested most widely in animal nutrition and receiving sufficient study to warrant their classification as growth-promoting antibiotics are terramycin, aureomycin, penicillin and streptomycin. Bacitracin has been added to the list in recent months, but its value has not been fully established. The antibiotics also have a favorable effect in reducing the mortality of young animals.

The rate of growth is stimulated most dramatically in the young animals, where the increase caused by antibiotics over and above that due to vitamins may be as much as 15-20 percent. As the animals approach market weight, the margin decreases somewhat. In chickens and turkeys of market size, the difference in weight may still be as high as 10 to 15 percent.

The bulk of the antibiotic supplement production is distributed to feed manufacturers, and much con-

fusion has been caused by the fact that fermentation products may contain appreciable proportions of both vitamin B-12 and antibiotics. Accordingly, on Oct. 4, 1950, the Association of American Feed Control officials took action to eliminate the definition of "Animal Protein Factor Supplement" and set up new definitions for "Vitamin B-12 Supplement" and "Antibiotic Feed Supplement". The ruling became effective Jan. 1, 1951. Each supplement is now labeled according to its minimum guaranteed content of vitamin B-12 or specific antibiotic content, respectively.

Are Cheap

Since antibiotics for feed purposes are not subject to the expensive refining operations required for pharmaceutical products, they are much cheaper to produce than the therapeutic grades. Moreover, the feed outlet provides an opportunity for the disposal of by-products and residues from the pharmaceutical refining operations. Antibiotic supplements are sold as free-flowing powders containing harmless diluents and a low content of antibiotic. Our company's Bi-Con-TM-5, for example, contains 5 grams of terramycin per pound, and is recommended for feeding at a level of 7 to 12 grams of terramycin per ton.

Antibiotic supplements are sold in the price range of 15 to 20 cents per gram of active ingredient, so that the cost to the feeder is reasonable in comparison to the gains in weight and feed efficiencies obtained.

Antibiotic feed supplementation promises to be big business. Arthur D. Little, Inc., estimates that within a year the value of the supplements produced may reach 20 to 30 million dollars, with some authorities expecting much higher figures. This estimate is based on the needs of a billion and a half growing chickens, 45 million turkeys and about 100 million pigs. The most inaccessible consumer is the feeder who uses home-grown grain. He must ultimately be reached by the supplement distributors if he is to keep abreast of the increased efficiency in meat production of the larger feeders using supplemented prepared feeds.

Aside from the cost aspects of supplement feeding, there are other considerations bearing on possible improvements in our standard of living. One large packing house is advertising the improved quality of supplement-fed friers, contending that the more rapid growth produces a more tender bird. The back fat in the carcasses of supplement fed hogs has been examined. The quality appears to be fully equal to that of hogs raised on supplement-free diets.

Of greatest importance to our economy is the saving in the animal protein requirements of feeds. By combining antibiotics and vitamin B-12 supplements, all-vegetable proteins such as corn, soybeans or peanuts can be used more extensively in basal relations. Combined with the shortened feeding times to reach market size, this adds up to a higher meat producing potential for any grain producing area.

The Department of Agriculture has recently begun an all-out effort to increase 1951 corn plantings by some 5 million acres. It is said that "high-level live stock production is cutting into grain reserves and only big feed grain production this year will make it possible for farmers to turn out the volume of meat, poultry, and dairy products required to meet continuing demands."

Reduce Corn Needs

This statement does not take into account the possibility of reducing the corn requirements by better feed economy. Controlled experiments with hundreds of pigs at Arenel Farms, near Shoemakerville, Pa., show that terramycin supplementation results in a saving of about 50 pounds of corn per hog marketed. Duplication of these results on a national scale would reduce the corn requirements for hog feeding by about 100 million bushels.

Assuming an average yield of 50 bushels per acre, that would cancel out almost half of the 5 million acres of corn that Secretary Brannan finds is needed. Supplement feeding of poultry on a large scale would take another big bite out of the alleged shortage.

Although the effectiveness and economy of antibiotic supplementation appears to be established beyond a doubt, there are hazy areas where the information from conflicting reports will have to be cleared up by further research. The possible protein-sparing action of antibiotics is a subject under active study by nutritionists. It is also believed that less vitamin B-12 supplementation is required when antibiotics are fed. In our own tests with terramycin on hatchery run New Hampshire chicks, there is evidence of a sparing effect on both protein content of the ration and vitamin B-12. These effects of antibiotics are very important as they point to the possibility of a reduction in cost of both the basal ration and the vitamin supplement. Poultry experts are investigating the effect of antibiotics on egg production and the time required to bring birds into production.

Antibiotic feeding is so new that scarcely any data are available on the specialized branches of animal industry. Favorable results with APF supplements on mink are being followed up with studies on antibiotics. Results on domestic rabbits have been inconclusive. Informal progress reports on semi-domesticated game birds are enthusiastic. Pheasant and guinea hens in particular have been reported as larger, more vigorous, and suffering less mortality. Breeders of all kinds of livestock are exploring the use of antibiotic supplements.

In the case of swine, sows have been reported to bear healthier, more uniform pigs, milk better and bring their pigs to weaning with virtually no runts. So far as reports are available, sow fertility seems to be unaffected by antibiotic feeding.

With the advent of antibiotics a new chapter in livestock feeding is being written.

—Soybean Digest Photo

Use of soybean glue on shotgun shell casings has lowered the cost of production.

Soys Provide Better Glue for Shells

More than half the shotgun shells used by hunters in the United States now have paper casings made with soybean glue. One large shell manufacturer is using soybean glue exclusively. This new adhesive is a product of cooperative research by industry and the Bureau of Agriculture and Industrial Chemistry's Northern Research Laboratory. It provides not only a replacement for scarce animal and casein glues, but also a new outlet for the protein fraction of America's soybean crop.

The new glue fills a need long felt by makers of shotgun ammunition. A satisfactory adhesive for shell casings was previously made with casein, derived from skim milk, but of limited domestic supply. Adaptation of soybean protein for use in this glue provides an ample domestic supply of suitable adhesive and lowers the cost of shell production.

Making soybean glue fit the special requirements for use in shell casings presented several unique problems. The glue had to be stable enough to hold the casing to its correct dimensions and thus assure easy ejection of the shell from the gun barrel. It had to be free of any free-alkali that might promote chemical reaction with the smokeless powder in the shell. The glue also had to produce a casing that would remain tough and leathery, and not become brittle with age. Finally, the casing had to satisfy that all-important requirement of the hunter—positive water resistance to keep the powder dry.

Work on this special application of soybean glue began early in 1946, when a large ammunition firm asked for assistance in solving its glue problems. Because of the Northern Laboratory's previous years of research on soybean protein, its scientists soon developed a suitable formula. Within a few months the glue was ready for trial in making casings on regular factory equipment. The experimental shells were subjected to rigid tests, simulating the treatment that a shotgun shell casing must undergo in actual use. By May 1947, the manufacturer reported soybean glue to be more satisfactory and economical for shell casings than any glue his firm had ever used.

Soybean protein for this glue is obtained by treating oil-free soybean meal with a solution of caustic alkali, similar to ordinary lye. This treatment dissolves the protein. The insoluble portion of the meal is strained out, and the protein solution is then treated with acid, which precipitates or coagulates the protein. The protein is dried and ground to a powder and can then be stored until needed. It is formulated into liquid glue by adding water, alkali, and other substances. When a casing is made, the glue is spread on one side of a sheet of special paper as the paper is rolled into a tube of proper diameter.

A difficult problem often encountered in the use of a new product is its handling on conventional factory equipment. However, the new soybean glue has caused no operational troubles on standard shell-fabricating machines.

SWEDISH PLANT BREEDER STUDIES U. S. SOYBEANS

Sven J. A. Holmberg, plant breeder of Norrkoping, Sweden, was in the United States for seven weeks studying soybeans. He embarked for Sweden July 13.

Holmberg, of Algot Holmberg & Sons Seed Co. of Norrkoping, through intensive breeding and selection, has produced some strains of soybeans having considerable promise for certain sections of Sweden, though in general soybeans are not considered adapted to Sweden's northern climate.

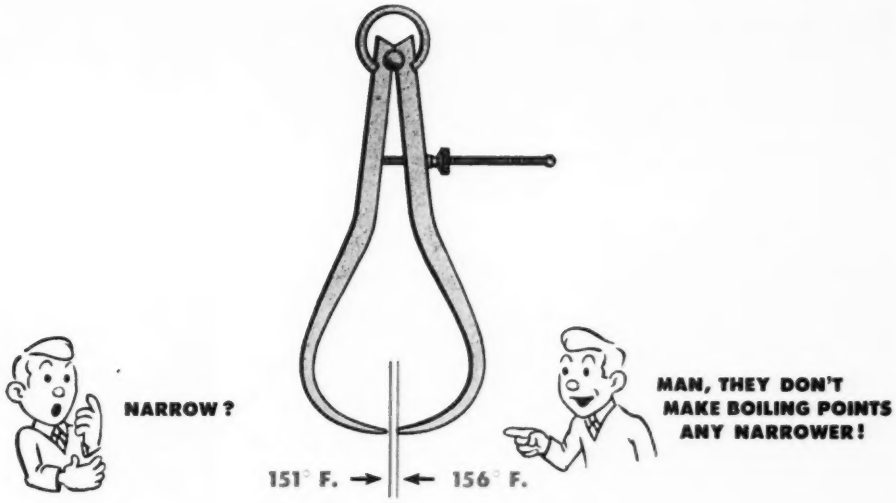
His trip to this country was an Economic Cooperation Administration project in cooperation with the U. S. Department of Agriculture. His studies here included the breeding and production of the crop, its processing and use of soy products in human food. Sweden is mainly interested in soybeans as human food.

While in the U. S., Holmberg's itinerary took him to Washington, D. C., and seven states, where he spent considerable time at USDA laboratories, state universities, with soybean processors, growers and manufacturers of soy foods. His visits included the headquarters of the American Soybean Association at Hudson, Iowa, where he spent several days with Secretary-Treasurer Geo. M. Strayer and the staff of the Association.

Holmberg has been in this country twice before, in 1938 and 1940.

—Soybean Digest Photo

Sven Holmberg (right) and Paul C. Hughes, field service director of the American Soybean Association, check soybean root for nodulation in a field near Hudson, Iowa.



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TIME AND TEST PROVEN

Big Increase in Oil Futures Trading

Interest in soybean oil futures increased greatly with trading on the exchanges expanding almost 1,500 percent during the fiscal year ended June 30, Commodity Exchange Authority of the U. S. Department of Agriculture reports.

Total trading on the New York exchange and on the market opened last summer by the Chicago Board of Trade amounted to 3,532,620,000 pounds compared with 227,100,000 pounds on the New York market during the preceding year, CEA said.

The soybean futures market on the Chicago Board of Trade continued to attract a very large volume of trading during the year, the dollar volume of futures transactions being exceeded only by that in cotton and wheat. However, the volume of trading in soybeans, 2,952,610,000 bushels, was 18 percent below the record level of 3,613,906,000 bushels traded in the preceding year when speculative activity in the market approached runaway proportions, says CEA.

The largest trading volume in any feedstuff was in soybean oil meal, amounting to 2,292,000 tons on the Memphis Merchants Exchange Clearing Association. This was a 103.6 percent increase over the 1,126,000 tons traded the year before.

The annual average of month-end open contracts for soybeans in 1951 was 39.3 million bushels compared to 54.1 million bushels in 1950, and 17.4 million bushels in 1949.

The 1951 average in open contracts for soybean oil was 164.5 million pounds compared with 17.1 million pounds in 1950. This included both New York and Chicago markets.

The 1951 average in open contracts for soybean oil meal was 175.6 thousand tons in 1951, 77.3 thousand tons in 1950 and 26.1 thousand tons in 1949.

Price range of soybean futures for the year was $1.19, from a high of $3.45½ July 17-18 to a low of $2.26½ Oct. 16.

Price range of soybean oil futures on the New York Exchange was $11.05, from a low of $10.75 July 7 to a high of $21.80 Jan. 31. Low at Chicago was $11.30 Aug. 4-5, and high was $21.95 Jan. 30.

Year's range in meal futures was $38.10, from a high of $92.60 July 17 to a low of $54.50 Oct. 16.

—sbd—

BUILD TEXAS PLANT

Chemical plants division of Blaw-Knox Co., Pittsburgh, Pa., has received a contract from the Southland Cotton Oil Co. of Paris, Texas, to furnish a soybean extraction plant with a daily capacity of 150 tons for installation at Jackson, Miss.

The plant will be designed for immediate operation on soybeans and later adaptation to extraction of cottonseed as well as soybeans. This is the first order from the South for Blaw-Knox soybean or oilseed extraction equipment, and it calls for the use of the Rotocel.

Under the contract, Blaw-Knox will provide all design and engineering, furnish all processing equipment, and supervise erection and initial operation. The plant is expected to be ready for operation early in 1952.

—sbd—

ON PARAGUAY TRIP

K. S. MARKLEY

Dr. K. S. Markley, of the Southern Regional Research Laboratory, New Orleans, La., will make a three-months' survey of the production and processing of oilseed crops in Paraguay for the Institute of Inter-American Affairs, beginning July 18.

He will investigate the production and handling of cottonseed, tung nuts and other oilseeds, particularly palm nuts. The survey is part of the Point IV program of supplying technical aid to foreign countries.

Markley has been head of the oil and oilseed division of the Southern Laboratory since 1939, and has supervised the U. S. Tung Oil Laboratory in Bogalusa, La., since 1949. He is the author or editor of several books, mostly on oilseeds.

—sbd—

USE MORE SOAP

Total disappearance of soap and synthetic detergents per capita is estimated for 1950 at 30 pounds compared with 27 pounds in 1949 and an average of 26 pounds in 1935-39, reports May-June Fats and Oils Situation of U. S. Department of Agriculture.

The 1950 figure includes 22 pounds of soap and 8 pounds of synthetic detergents. Per capita disappearance of soap in 1949 and 1950 was the lowest for any year since 1921. But disappearance of total soap and synthetic detergents in 1950 was higher than any year before 1941.

Deflect Heat with Soybean Oil

—Staley Journal Photo

This syrup tankcar belonging to A. E. Staley Manufacturing Co. is painted with a 100-percent-soybean-oil paint. The paint advertises the Decatur, Ill., soybean processor, also soybean oil. In addition it is more efficient in deflecting heat than any other tankcar finish known. This is an important consideration as heat is one of the problems of firms shipping syrup in tankcars.

Good Start in Central Soybean Belt

Conditions were about ideal in July in the central part of the soybean belt—in Illinois, Indiana and Ohio. The crop is off to an unusually good start in this area, on a somewhat reduced acreage.

But over much of the rest of the soybean growing areas—particularly west of the Mississippi River—rainfall continued above normal the first half of July and maturity was somewhat behind normal. Everything depends on the weather the balance of the season in these areas.

Weeds and grass are more of a problem than usual in the areas of heavy rainfall. And more disease is being reported than is usual this early in the season.

The per acre yield outlook as a whole may not be quite up to the same time last year.

There apparently is little worry so far about handling the crop movement this year.

The acreage of soybeans planted *alone for all purposes* this year is estimated at 14.5 million acres, according to the U. S. Department of Agriculture crop reporting board July 10. This is less than 2 percent below last year's record acreage but 18 percent above the 1940-49 average. Current indications are about 5 percent higher than growers' intentions as expressed on Mar. 1. The increase over intentions was largely on land that could not be planted to other spring crops, especially oats, due to unfavorable weather conditions.

The acreage in the North Central states is down about 4 percent from last year due mainly to the shift back to corn. The sharpest decreases of the major producing states are in Iowa with a drop of 18 percent from last year and Illinois with a reduction of 11 percent.

Growers' intentions as of July 1 point to 13.1 million acres of soybeans for harvest as beans. If such a harvest materializes, it would be only slightly below last year's record acreage.

SOYBEANS

State	Acreage grown alone for all purposes			Acreage for beans		
				Harvested		
	Average 1940-49	1950	1951	Average 1940-49	1950	For harvest 1951
	Thousand acres			Thousand acres		
N. Y.	15	7	10	10	6	9
N. J.	33	29	32	11	14	14
Pa.	78	44	37	24	17	15
Ohio	1,105	1,100	1,133	942	1,056	1,099
Ind.	1,593	1,702	1,702	1,298	1,591	1,660
Ill.	3,584	4,091	3,641	3,184	3,948	3,532
Mich.	129	122	120	96	117	115
Wis.	104	70	46	35	24	20
Minn.	539	1,101	1,112	444	1,057	1,073
Iowa	1,738	1,960	1,607	1,559	1,921	1,577
Mo.	760	1,175	1,363	584	1,191	1,321
N. Dak.	*10	44	31	*8	41	28
S. Dak.	22	68	63	19	66	61
Nebr.	34	50	50	27	46	46
Kans.	213	370	518	177	359	506
Del.	60	65	58	36	46	43
Md.	80	80	79	32	41	55
Va.	156	176	202	83	133	154
W. Va.	34	16	13	1	1	1
N. C.	388	418	410	232	301	298
S. C.	45	82	100	15	44	54
Ga.	84	92	110	12	24	34
Fla.	—	—	9	—	—	6
Ky.	194	196	196	79	108	134
Tenn.	212	234	257	54	150	176
Ala.	253	195	220	33	90	114
Miss.	318	438	512	97	282	347
Ark.	319	629	660	224	556	580
La.	118	111	130	29	40	45
Okla.	21	29	61	7	21	45
Tex.	18	10	3	—	—	—
U. S.	12,266	14,704	14,485	9,348	13,291	13,102

* Short-time average.

Alabama

J. H. Bryson, Dothan Oil Mill Co., Dothan, for southwest Georgia, southeast Alabama, northwest Florida (July 24): Maturity of crop normal. Georgia and Alabama areas need rain. Northwest Florida weather and moisture conditions excellent. Yield outlook 18 to 20 bushels.

H. I. West, Bay Minette, for southwest (July 24): Maturity of crop looks normal. Weather and moisture conditions favorable. Yield should be 25 bushels. Marketing outlook okay. About 20 steel bins already built with more on order.

Arkansas

Jake Hartz, Jr., Jacob Hartz Seed Co., Stuttgart, for south and south central (July 23): Maturity 10 days later than normal. Better than 50 percent of beans in area were planted last week in June and first week in July and are no more than 3 inches tall. Very dry over whole territory. We could stand good general rain. We are starting to irrigate beans this week. Yield outlook poorest in last 3 years. We're predicting 12 to 15 bushel average. Anything planted in May very grassy, in cotton as well as rice section. Have had considerable damage from spotted cutworm on late June and early July plantings. In some instances complete stands were lost, but generally about 25 or 30 percent lost.

L. M. Humphrey, Robert L. Dortch Seed Farms, Scott, for Little Rock area (July 24): Maturity normal except some very late planted beans. Temperature about 5 degrees high every day past 2 weeks. Yield outlook a little lower than 1950 due to late planting of some fields. Some worms in late planted beans.

Keith Bilbrey, county agent, Blytheville, for north Mississippi County (July 23): Maturity slightly later than normal and a little spotted. Weather and moisture conditions okay now. Yield outlook satisfactory

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Florida

E. N. Stephens, county agent, Pensacola, for Escambia County (July 26): Maturity of crop normal. Weather and moisture conditions favorable. Yield outlook good. Beans very clean. Outlook for marketing good, storage not too bright. Some storage being built.

Illinois

Walter W. McLaughlin, Citizens National Bank, Decatur, for Decatur (July 23): Maturity normal. Plenty of moisture. Too much in a few places. Yield outlook good. More weeds than normal due to excessive rains that stopped cultivation. Outlook for marketing and storage of crop about same as last year. Many growers planning to hire storage at elevators.

J. C. Hackleman, professor crops extension, University of Illinois, Urbana (July 24): Maturity of crop up to normal and in some areas about 5 days ahead. Bloom set was complete in central Illinois last week in most fields, some bloom showing up even in area north of Illinois River, indicating crop is fully up to normal maturity. Very heavy rains during first half of July have prevented cultivation in many areas and beans likely to be more weedy than normal. At present yield outlook possibly better even than 1950. Weed factor may change above situation. Considerable amount of bacterial leaf spot particularly in south-central and central portions of state.

J. E. Johnson, Champaign, for Champaign and adjoining counties (July 24): Maturity about 1 week ahead of normal. Never had so few late-seeded fields. Weeds will be bad before harvest time. Some bacterial wilt early. Recent rains have removed this. Very small amount of colored leaves indicating disease. No insect pests. About 10 new storage tanks, steel or concrete, for the territory.

Robert W. Weitzer, manager Valley Farms, Inc., Carrollton, for west central (July 25): Maturity seems a little later than normal. Plenty of moisture and hot weather. Barring something unforeseen the crop is as good or better than last year. Excessive rainfall in some areas will make weeds a major problem at harvest time. Some will have to be defoliated before harvest. If crop sells at or below loan rate as many beans as possible will be stored due to uncertain war situation.

Russell S. Davis, Clayton, for west central (July 24): Maturity of crop well advanced. Abundant moisture. Good growing weather. Yield outlook excellent. Weeds bad as ever. Considerable disease in some fields. Looks now like plenty of storage.

Gilbert F. Smith, Mahomet, for east central (July 24): Believe crop is normal in maturity. No late planted beans that I know of. Lots of rain. Moisture is good. Could stand some sunshine. Some elevators are building bins at country towns.

Indiana

J. B. Edmondson, Danville, for south central (July 24): Maturity around week ahead of normal considering height as well as bloom. No reason now why practically all beans shouldn't beat the frost. Yield outlook as good or better than last year. Weeds not showing too much yet, but undoubtedly considerable trouble is lurking underneath. More new storage on way, due to savings last year by storing on farm.

K. E. Beeson, Indiana Corn Growers Association, West Lafayette (July 23): Crop in intensive soybean growing section normal. Many late planted fields on soils too wet for normal planting in some other sections. Except on wet soil yield prospects are normal. Weeds definitely on increase this year due to abundance of rain. Considerable brown spot, bacterial blight and some canker showing due to seasonal conditions.

Chester B. Biddle, Remington, for northwest (July 23): Maturity 100 percent. Weather and moisture conditions ideal. About July 1 excessive rainfall damaged some acreage. Yield outlook very good.

Peter J. Lux, state PMA, Indianapolis (July 25): Maturity of crop 10 days earlier than normal. Weather and moisture conditions very good. Yield outlook good. A few fields weedy.

S. D. Hollett, Swift & Co. Soybean Mill, Frankfort, for central western (July 25): Maturity 10 days ahead of normal. Weather and moisture conditions ideal. Yield outlook excellent. We should have 40 million bushels this year. Fields generally are clean. Outlook for marketing and storage of crop good. There is more storage available. Less wheat.

George K. Black, J. A. McCarty Seed Co., Evansville, for southwest (July 26): Corn and soybeans both well matured for this time of year. Some spots could use a rain. Yield outlook possibly 10 percent over last year.

Iowa

Robert Overton, Knoxville, for Marion County (July 27): Maturity 7 to 10 days late. A considerable acreage of bottom land very late, not planted until July 15 or later. Will be 25 to 30 percent frost damage with a normal frost date. 10 percent may be cut for hay. Yield outlook 15 to 20 bushels.

Howard L. Roach, Plainfield, for northeast (July 24): Maturity of

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crop 10 days late. 10 percent of late planted beans may be cut for hay. Yield outlook normal. Drilled beans very weedy. Row crop beans fair.

Otis J. Luttschwager, PMA, Des Moines (July 24): Maturity later than normal. Weather and moisture conditions good. Yield outlook good. Weed situation good with some exceptions.

Robert R. Kalton, farm crops department, Iowa State College, Ames (July 25): Maturity of crop probably averages week late, but ranges from near normal to month late. Many fields planted in late June. With normal weather rest of season, bulk of crop should mature before frost. Ample moisture, temperatures almost ideal last week or two. Yield may be down slightly from acre yields of last few years. Weeds may cause trouble in many fields. Haven't been able to cultivate at proper times. Some bacterial blight or pustule.

Fred Hawthorn, Castana, for western (July 26): Maturity 10 days late. Fair chance for maturity before frost. Too much rain in May and June. Yield outlook under normal. Weed situation bad.

Kansas

G. C. Wareham, Thomson Soya Mill, Hiawatha, for northeast (July 23): Maturity will be about normal providing we get some hot summer weather. Some late planting will need delayed frost for good maturity. Last few weeks farmers have been delivering seed beans to market due to wet fields and late season. For first time this summer have had fair drying conditions this last week. Everyone in fields harvesting small grains.

Extension division, Kansas State College, Manhattan, for eastern (July 24): Maturity normal. The eastern Kansas floods from June 12 to July 20 on many streams were record floods and many many acres of bottom land beans were destroyed. Yield outlook good on remaining acreage.

H. L. Collins, agricultural statistician in charge (July 25): Planting delayed by wet weather and wet fields. Growth being retarded by cool, wet weather. Outlook for maturity still good if normal weather prevails from now on. If present cool, wet weather prevails outlook is discouraging. Large acreage drowned out, exact percentage as yet unknown. Late planted beans turned yellow due to excessive moisture. Early planted beans standing the continued wet weather much better. Outlook now for yield well below normal. Many fields had never been cultivated prior to last week. Grass and weeds have taken many fields.

Kentucky

A. J. Reisz, Henderson, for southern Indiana and west Kentucky (July 23): Maturity of crop 10 days earlier than normal. Weather hot. Could use rain. Yield outlook possibly average. Weed situation bad.

Louisiana

W. M. Scott, Scott Plantations, Tallulah, for Louisiana Delta (July 23): Maturity 50 percent normal, 50 percent of crop sure of maturity, 50 percent doubtful. Good showers last 2 days, first in 3 weeks. Yield outlook very spotted. About a third good, 35 to 40 bushels; a third fair, 25 to 30 bushels; a third, 10 to 15 bushels. Weed situation worst I have ever seen. Clean fields are rarity. Some cutworm damage on late beans. About 200,000 bushels storage added.

Minnesota

John W. Evans, Montevideo, for southwest central (July 25): Much variation in fields. My Blackhawks are good height and blossoming. If frost normal most fields will ripen. Tendency to be weedy. This past weekend drove to Sioux City and as far as Harlan, Iowa. Soybeans in northwest Iowa very backward and being cultivated. Soybeans in southwest Minnesota very spotted and corn backward.

R. E. Hodgson, Waseca, for south central (July 27): Maturity on most fields about normal. Moisture ample. A week of hot weather has made beans jump. On the Minnesota farm managers' tour I tried to note soybean fields in southern Minnesota, estimated at 10 to 80 acres in size. Those which looked clean and well grown I put in the "good" column and those showing considerable areas drowned out, late planted or very weedy were put in "hurt" column. Along Highway 16 from Fairmont to Albert Lea the numbers were about 50-50. Further north they were much better. Count was 147 good, 57 hurt. Damage might cut yields 5-10 percent, mostly due to flooding. Most fields look very clean.

Missouri

Carver Brown, Laddonia, for northeast (July 25): Maturity a week

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ahead of normal. Excessive moisture from June 1 to now. Yield outlook 10 percent above normal. Most beans ahead of the weeds.

O. H. Acom, Wardell, for Pemiscot County and southeast (July 27): Early beans normal in maturity. Late beans considerably later. Yield outlook for early beans good, later beans fair. Weed situation bad. Hundreds of acres of abandoned cotton would have been planted to beans but rain continued till too late.

Nebraska

Harry E. Wiysel, Fremont Cake & Meal Co., Fremont, for east central (July 23): Maturity about 10 days to 2 weeks late. Past 2 weeks have been good. Moisture ample. Due to late planting yield will probably be a little under normal. Most fields fairly clean. Weeds not serious. Should be considerable amount of crop stored on farms due to short wheat and oat crops.

Donald G. Hanway, University of Nebraska, Lincoln (July 25): Part of crop in east later than normal due to late planting. Weather and moisture conditions excellent for growth. Yield outlook average or better. Some fields show more weeds than 1950. Some bacterial blight in all fields.

New Jersey

John E. Baylor, College of Agriculture, New Brunswick (July 24): Maturity of crop normal to slightly advanced. Weather hot and humid. In general fair to ample moisture. Yield outlook good. Weeds will be problem in many fields.

North Carolina

Weather and Crops in North Carolina, USDA Bureau of Agricultural Economics, Raleigh (July 21): Almost all reporters indicate a fair to good or better condition of the soybean crop. Reports of "good" make up almost half of all reports.

I. Morgan, Morgan Oil & Refining Co., Farmville, for eastern (July 24): Maturity normal. Weather dry in certain areas. Yield may be reduced by dry weather. Normal marketing may be upset on account of large cotton crop since cotton oil mills usually handle some of bean crop.

North Dakota

C. J. Heltemes, Fargo for southeastern (July 24): Warm weather past 2 weeks has brought crop along to where is now near usual stage for this date. Topsoil dry in Cass County but adequate subsoil moisture. Plenty of moisture in Richland County. Yield outlook good. Weed situation bad.

Ohio

Calvin Heilman, Kenton, for Hardin, Wyandot and Marion Counties (July 24): Maturity normal. 95 percent safe from average frost. Some spots have been wet. Most of area however short on moisture. Yield outlook average to 105 percent of average. Some disease and insect damage but none of serious proportions.

Soybean Johnson, Delphos Grain & Soya Products Co., Delphos, for northwest (July 25): 75 percent of crop 2 weeks ahead of recent years. 20 percent about normal. 5 percent late, some replant (water damage). Weather and moisture about ideal. A few scattered areas have too much moisture and small acreage damaged by hail. Yield outlook excellent and should be above last year. Not enough weeds to affect yield. Leaf

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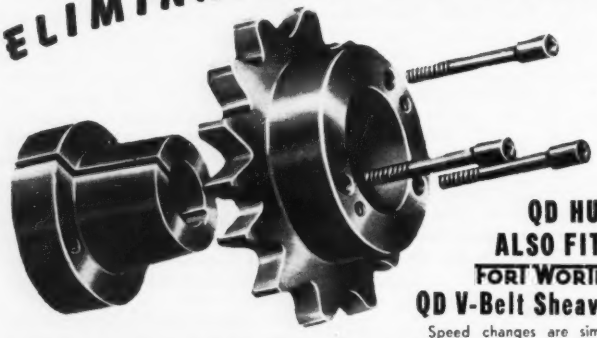

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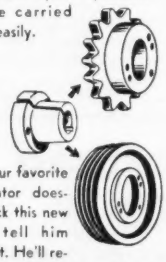

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hoppers did some early damage. Vigorous growth so far has prevented any disease from showing.

G. G. McIlroy, Irwin, for west central (July 24): Maturity normal. Weather and moisture conditions 100 percent to date. Yield outlook probably above normal. Plenty of storage. Many fields of soybeans standing 2 feet or more in height. Hawkeyes in full bloom. Corn prospects above normal along with soybeans. Many fields in full tassel.

Virginia

W. C. White, assistant extension agronomist, Blacksburg (July 25): Early varieties planted in May and early June in full bloom and beginning to pod. Late or full season varieties just now beginning to bloom if planted early. Recent rains very good for helping obtain stands of beans planted after small grain. We are hoping our average yield per acre will surpass last year's yield by several bushels. Too many weeds. Many farmers neglected soybeans when they were busy getting corn crop clean. More farmers used rotary hoes this year than in past, but not enough early cultivation. Some Mexican bean beetles and in several counties near Norfolk Japanese beetle detrimental. Some farmers have dusted for the insect. One new grain elevator in Westmoreland County and the Tidewater Regional Market, Norfolk, will handle soybeans for the first time this year.

Henry M. Taylor, Department of Agriculture, Richmond (July 24): Fields range from just seeded to waist high. Average about 1 week late. Very dry July 1-15. Local showers since in most areas. Yield too early to forecast—average to above. Japanese beetle doing slight damage in Norfolk area. About 100,000 bushels new storage being built.

West Virginia

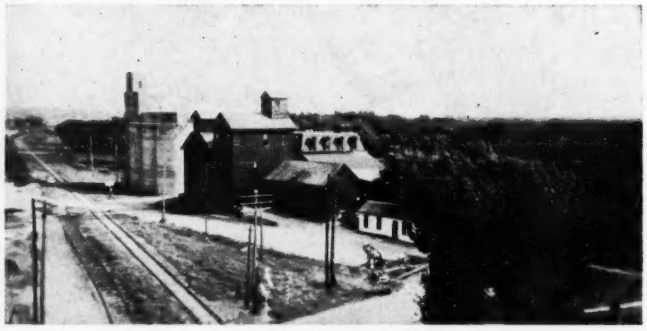
R. J. Friant, extension agronomist, Morgantown (July 23): Maturity 7 to 10 days late but catching up fast. Weather and moisture conditions on whole excellent, if anything too much rain in much of state. Estimated acreage in state about 1,000. Practically all grown for hay.

Geo. M. Briggs, Madison (July 26): Maturity normal. Weather and moisture conditions very favorable. Yield outlook good if weather keeps up. Weed situation not bad. Some lower leaves rusted.

Ontario

R. H. Peck, River Canard, for southwest (July 25): Maturity normal. Weather good for growing but excessive moisture in some areas. Yield outlook average. Weeds not serious in most sections but a few more than average. A slight improvement in marketing and storage outlook over last year. Small amount of storage being built on farms. A few steel bins being brought in.

Pioneered Meal Sales in Range Country



Above is the headquarters of Neligh Mills, manufacturer of flour, cereals and feeds at Neligh, Nebr.

The Mills serves a large area of the range country where a considerable tonnage of soybean oil meal is used in the form of pellets by cattle ranchers.

The Neligh Mills pioneered the sale of soybean oil meal in the range country and was the first to call on ranchers direct, at a time when cottonseed cake was almost the exclusive supplement used. The firm handled soybean meal on a brokerage basis and the first year made the sale of one carload.

"We kept our representatives busy talking soybean meal and worked up a brokerage business of 165 cars during a year," says Miss A. A. Vidstedt, the vice president and manager. "Some was sold direct to ranchers and the balance to dealers."

Neligh Mills has continued in the soybean oil meal business every year since and at present is jobbing the meal for three processors.

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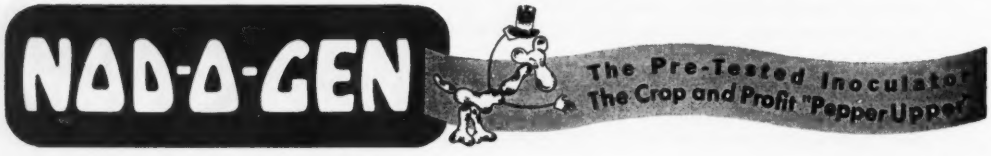

Chicago Will Trade in Soybean Meal

At a ballot vote held July 16 the membership of the Chicago Board of Trade passed a rule which authorizes the trading in soybean meal futures contracts, effective Aug. 1, 1951, or as soon thereafter as an official date is set. The proposal carried by a vote of 511 to 16.

In Oct. 1936 futures trading in soybeans was inaugurated by the Chicago Board of Trade. During the ensuing 15 years the volume of trade in soybean futures has assumed proportions fully commensurate with the great importance of this comparative newcomer into the agricultural economy.

Almost a year ago, to meet the need of producers and processors, futures trading in crude soybean oil was inaugurated in the Chicago market. In the intervening 12-month period the activity has placed the Chicago Board of Trade as the largest futures market in crude soybean oil.

By its affirmative action the membership of the Board of Trade has met the requirements of the soybean industry for a marketing structure of soybeans and the two main products, soybean oil and soybean meal.

Regarding soybean meal, it is most interesting to note the tremendous strides that have taken place in its production. In 1926, only 25 years ago, the total United States production of soybean meal was only 8,300 tons. This compares with close to 5 million tons produced in 1950.

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WASHINGTON DIGEST

PRICE CEILINGS. The new price control law won't necessarily change the situation for the soybean industry much. That's the way it looks the day after Congress passed the new Defense Production Act.

This preliminary judgment is subject to the legal determinations to be made by government lawyers. This usually takes two weeks or more after major legislation passes. Until then the Administration can proceed only on clearly unmistakable provisions.

Frequently "joker" clauses, or plain "busts," are discovered that escaped the notice of harried congressmen in the hectic moments of final passage. To detect these, and to establish the real intent of Congress, lawyers study every section, paragraph, sentence and phrase.

It is only after an act of Congress has been gone over with this legal fine toothed comb that the legal basis for government action is laid—subject of course, to possible federal court rulings later.

Present price ceilings on beans, oil and meal comply with the new law. The legal minimum still holds for beans.

The new law provides that price ceilings on farm products can't be set lower than parity, or below 90 percent of the farm price by grade of May 19, 1951 or below the highest price paid between May 24 and June 24, 1950—whichever is higher. This provision was tailor-made for beef cattle, to prevent the second and third price roll backs announced by OPS. However, it might apply also to any farm product that was more than 110 percent of parity last May 19—except soybeans. In addition to beef, these are lambs, wool and cotton.

OPS officials now have in mind merely adjusting bean ceilings around present levels. They say they want to get country point ceilings in line with Chicago—that they failed to do this last spring because USDA was late in furnishing the county legal minimums. The talk up to now is for lowering ceilings at Midwest country points 4 to 5 cents a bushel.

USDA has come into the price control picture again with a proposal that the moisture content of beans be considered in setting grade differentials on bean price ceilings. OPS says this injects a new and upsetting factor. It intends to ignore USDA on this point, and is prepared to engage in a knock-down fight over it if need be.

Bean, oil and meal prices are likely to be under any ceilings OPS may set for six months at least. USDA market men think farm prices this fall will go a little under the $2.45 a bushel price support. They think oil prices have about touched bottom.

By WAYNE DARROW
Washington Correspondent for The Soybean Digest

Without exception, they think meal price futures are too low.

PRICE OUTLOOK. Officials think markets are giving too much weight to the prospective big bean and cottonseed crops—say this market tendency has been noticeable nearly every summer in recent years. They think markets are not allowing enough for the price lifting effects on bean meal of:

(1) High priced corn. (2) Increasing animal feeding units. (3) Uptrend in rate of feeding of protein.

The table below, based on USDA official reports and latest estimates, gives an over-all picture of the major factors in the bean and cottonseed meal and cake situation.

The supply of these two meals per animal unit has increased from 68 pounds in 1946-47 to 86 pounds in

	Prod. S'bean & Cottonseed Meal & Cake	Animal Feeding Units	Av. Farm Price of Corn	S.B. Meal, Bulk Decatur	Cottonseed Meal, Bags Memphis
1946-47	5,514,000 T.	161.4 mi.	$1.65	$69.00 Av. Range: $60-82.50	$75.80 Av. Range: $68.10-84.20
1947-48	5,849,000 T.	155.9 mi.	2.12	$79.40 Av. Range: $72.40-83	$83.20 Av. Range: $70.95-91.60
1948-49	6,746,000 T.	162.9 mi.	1.22	$64.20 Av. Range: $58.80-77.50	$63.10 Av. Range: $57.30-70.95
1949-50	7,071,000 T.	170.1 mi.	1.25	$62.40 Av. Range: $54.70-68.20	$64.80 Av. Range: $58.70-73.50
1950-51	7,650,000 T.	176.0 mi.	1.55	$64 Av. Range: $54.70-68.20	$79 Av. Range: $69-83
1951-52	8,100,000 T.	180.0 mi.	1.60	?	?

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1950-51. The rate per unit will have to increase to about 90 pounds the coming year to absorb the meal production from this year's large bean and cotton crops. An increase equal to the average of the last four years will take care of the big meal supply without serious price declines.

Estimates of the corn crop here are going down, and up for the bean crop. Officials now look for a corn crop no larger than last year's, and quite possibly lower. The bean crop is guessed at close to last year's big crop.

The cotton crop looks good for 17 million bales. Reports from the field indicate acre yields up to the three-year average.

USDA is going all-out to keep cotton prices up to parity. For one thing it recognizes that it's a high cost crop, and officials want it to pay farmers well enough that another big crop can be had next year. For another thing, Southern congressmen are on the necks of USDA officials, demanding parity price loans.

Export buying of beans and some crude oil is due to start in September, and get heavy during October. Officials say there's no doubt at all that foreign demand for beans is strong. Foreign countries are waiting for a lower price, and seem sure of getting it. However, a few of them can't wait much longer—they're hard pressed by shortages.

Imports of fats and oils (except copra and coconut oil) are severely restricted the next two years in the tightest law yet, embodied in the Defense Production Act. Officials aren't sure whether this will have much effect on domestic prices except perhaps to head off severe declines should fats and oils markets get to skidding.

The import provision applies to fats and oils, dairy products and rice. Here it is in simplified language:

No imports of these products shall be permitted before June 30, 1953, that will reduce domestic production below present levels, or below such higher levels the Secretary of Agriculture may set in annual production goals, or that will interfere with orderly marketing, or will add to the cost of price supports.

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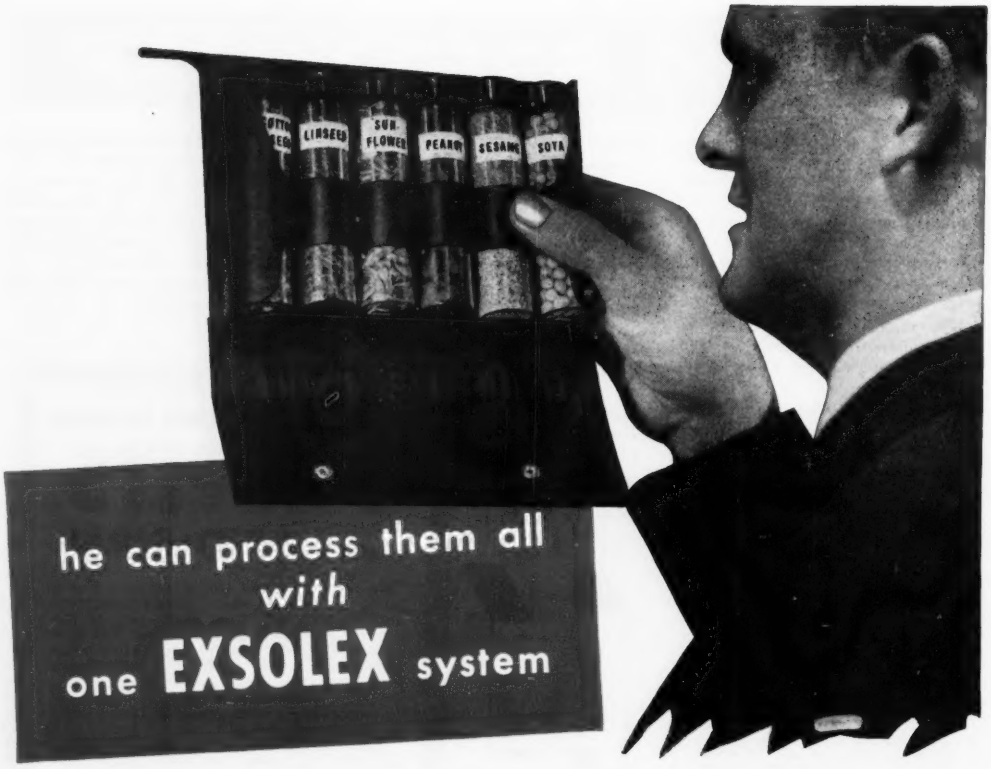

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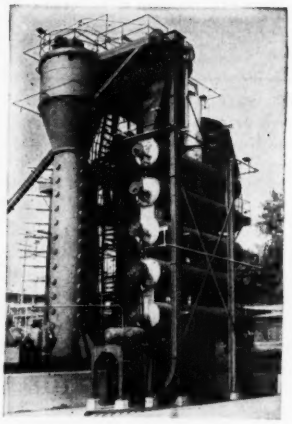

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Manchurian Beans Are Back in Europe

The re-entrance of Manchurian soybeans into Western Europe on a fairly large scale is a development of considerable interest to American farmers, according to Paul E. Quintus, marketing specialist of the Office of Foreign Agricultural Relations, U. S. Department of Agriculture.

Quintus recently visited the European continent. His conclusions are set forth in a Foreign Agriculture circular.

While the quantity of Manchurian soybeans is still small in terms of prewar trade (about 10 percent) its significance is great, says Quintus. The East needs Western goods and soybeans are one of the best trading commodities for this purpose. Now that trading arrangements have been worked out, the volume can be expected to increase.

Competent observers believe that at least 18 million bushels of Manchurian soybeans will reach Western Europe from the 1951 crop if the international situation does not change for the worse. If the situation improves, trade could conceivably return to the prewar rate of some 85 million bushels of soybeans, including the bean equivalent of soybean oil.

The Europeans who commented on this trade generally expressed a strong preference for Manchurian beans over those of United States origin. The Manchurian soybeans were said to have a higher oil content, fewer brokens, and less foreign matter. Moreover, they preferred the method of sale, which is based on inspection at port of arrival with a guaranteed 17 percent oil content.

It is probably accurate to conclude that the Communists are bent on winning back the European markets and are doing an especially good job on quality as an important step in this direction.

Another consideration is that Manchurian supplies are generally available in the form of beans rather than crude or refined oil. The cake and meal is urgently needed for livestock feed in Europe. And the oilseed crushing industries of Western Europe are greatly overexpanded in terms of available raw materials. Assuming competitive prices, soybeans from Manchuria would be preferred to a corresponding quantity of soybean oil from the U. S., quite aside from any considerations of quality. In France and Western Germany particularly, many rebuilt and modernized mills are operating at a fraction of capacity and face a desperate economic situation.

Also, Manchurian soybeans can be bought without dollar exchange. As long as dollar balances remain a problem to European countries, Manchurian soybeans are in a preferred position.

—sbd—

JAPANESE VISITOR

A study of U. S. soy products has been made by Shuichiro Kimoto, director of research and development of the laboratories of Yoshihara Oil Mill, Ltd., Kobe, Japan.

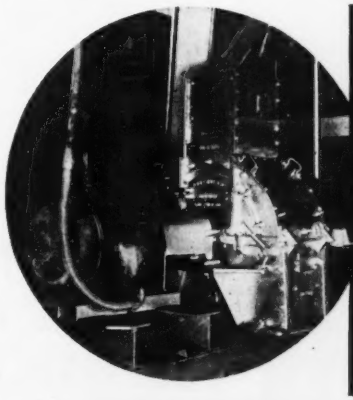
Kimoto, who is now in New York City, is interested in taking back information about the technical aspects of the manufacture of U. S. soy products to the Japanese people, and especially to students in that country. He returned to Japan in July.

The Yoshihara firm processes a large number of oilseeds, including soybeans. The solvent, screw press and hydraulic processes are all used.

Kimoto is a lecturer on agricultural chemistry in Japanese universities.

GREETS SUCCESSOR

Dr. W. L. Burlison, left, retiring agronomy department head at the University of Illinois, congratulated Dr. M. B. Russell, his successor at a noon luncheon June 26. Russell will supervise about 55 research projects carried on by about 50 men with a $500,000 department budget when he starts work Sept. 1. Under his supervision will be nearly 3,000 test plots on the 200-acre agronomy farm at Urbana and 25 soils experiment fields scattered throughout the state to test crops and soils under different conditions.



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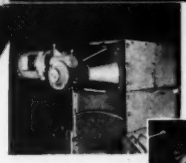

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PUBLICATIONS

Vitamin B-12 in All-Plant Rations

In vitamin B-12 studies at the University of Minnesota with normal chicks fed all-vegetable practical-type diets containing 20 percent of protein it has been found that:

1—A vitamin B-12 deficiency, resulting in a slow growth rate, poor feed efficiency, and gizzard erosion, may be produced in normal undepleted chicks even in the absence of "stress factors" in the diet. The deficiency is prevented equally well with crystalline vitamin B-12 or with any of the crude or concentrated sources of vitamin B-12 available today. Thus, vitamin B-12 appears to replace the need for the "animal protein factor" in normal chicks.

2—Methionine has a strong sparing action on vitamin B-12 and could completely replace the vitamin B-12 requirement of chicks fed a corn-soybean oil meal diet with the samples of soybean oil meal studied. Choline has considerable less sparing activity than methionine. Inorganic cobalt is ineffective in promoting growth when added to a ration low in vitamin B-12.

3—Normal chickens may be raised efficiently to 16 weeks of age and longer with an all-vegetable corn-soybean meal ration supplemented with vitamin B-12, riboflavin, vitamins A and D, and minerals.

Thus, animal protein feedstuffs are not essential in a ration for fast gain and economical production of poultry meat. This ration is successfully being used commercially in Minnesota and can be safely recommended as a broiler ration as long as good quality soybean meal is used.

VITAMIN B-12 IN ALL-PLANT RATIONS FOR CHICKS AND SPARING ACTIVITY OF METHIONINE AND CHOLINE. By G. M. Briggs, E. G. Hill and M. J. Giles, poultry husbandry division, University of Minnesota, St. Paul, Minn. Poultry Science, Sept. 1950. 450 Ahnaip St., Menasha, Wis.

Broiler Ration

A low-cost all-plant ration composed chiefly of corn and soybean oil meal has been used with success for starting and broiler chickens under laboratory and commercial conditions. The ration has the following formula in pounds per 1000: finely ground corn, 600; soybean oil meal, 350; bone meal or equivalent, 25; ground oyster shell or equivalent, 15; iodized salt, 10; 400D-3000A feeding oil or equivalent, 2; and manganese sulfate, 0.3. Each 1000 pounds also contains 1,500 milligrams of riboflavin and 7.5 milligrams of vitamin B-12 which are supplied by a riboflavin concentrate and APF supplement respectively.

Leghorn and New Hampshire chickens fed this ration grew at normal rates and utilized their feed very efficiently. The ingredients are inexpensive and the ration is relatively easy to mix. It lends itself readily to home mixing and custom mixing, especially with the present availability of vitamin pre-mixes on the market and the large supplies of home grown corn.

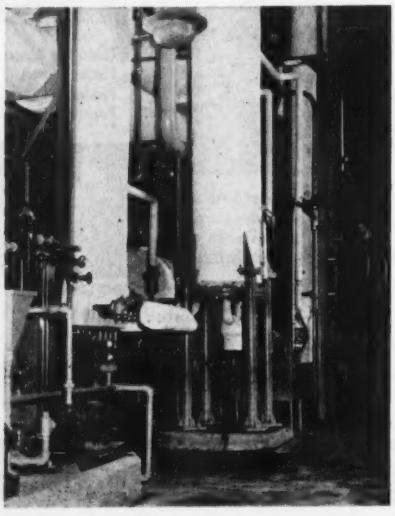
Although it is not claimed that this is as good as all broiler mashes on the market it does show the extremes which are possible in deciding between animal and plant protein feeds in a formula.

THE PRACTICAL USE OF AN ALL PLANT RATION FOR STARTING AND BROILER CHICKS. By G. M. Briggs, E. G. Hill and M. J. Giles, University of Minnesota, St. Paul, Minn. Abstract of paper presented at the 39th annual meeting of the Poultry Science Association, Poultry Science, Sept. 1950. 450 Ahnaip St., Menasha, Wis.

Meal Mixtures

Three different mixtures of soybean and cottonseed meals were tested as a source of protein for the growth of chicks in experiments at College Station, Tex. One diet contained cerelose, 20 percent of soybean meal and 30 percent of cottonseed meal; the second contained milo, 20 percent of soybean meal and 15 percent of cottonseed meal; and the third contained milo, 15 percent of soybean meal and 20 percent of cottonseed meal.

Chicks which received the basal diets grew at a fairly rapid rate, but the addition of 0.1 percent of L lysine



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increased the rate of growth in every case.

Peanut meal was a satisfactory source of protein for the growth of chicks to six weeks of age when it was supplemented with an APF concentrate and with at least 0.3 percent of DL methionine and 0.2 percent of L lysine.

In studies with mixtures of soybean and peanut meals methionine was the first limiting factor. When the mixture was supplemented with both methionine and an APF concentrate the chicks were slightly heavier than those which received the methionine alone.

PEANUT MEAL, MIXTURES OF SOYBEAN AND COTTONSEED MEALS AND MIXTURES OF SOYBEAN AND PEANUT MEALS AS SOURCES OF PROTEIN FOR BABY CHICKS. By L. G. Blaylock and L. R. Richardson, department of biochemistry and nutrition, Texas Agricultural Experiment Station, College Station, Tex. Poultry Science, Sept. 1950. 450 Ahnaip St., Menasha, Wis.

APF Supplement

An average of 12 experiments with pigs at the Florida Experiment Station definitely indicates that APF (Lederle) is concerned with efficiency of feed utilization.

APF also increases the rate of gain and hemoglobin level of pigs fed a basal ration of ground yellow corn, peanut meal, bone meal, limestone and salt.

The experiment was completed before the term APF was ruled out by the Association of Feed Control Officials.

EFFECT OF APF SUPPLEMENT ON EFFICIENCY OF FEED UTILIZATION FOR THE PIG. By T. J. Cunha, J. E. Burnside, G. B. Meadows, H. M. Edwards, R. H. Benson, A. M. Pearson and R. S. Glasscock, University of Florida. Journal of Animal Science, Nov. 1950. Vol. 9, No. 4.

Turkey Diet

The response of poults and growing turkeys to the addition of fish meal, fish solubles or an APF concentrate to a milo-soybean meal diet was variable, in experiments at College Station, Tex. There was a marked response to fish meal, fish solubles and the APF concentrate in some trials and no response in others. When three to four different trials were combined the poults which received fish meal or the APF concentrate were larger than those which received the basal diet or fish solubles, but the differences were not significant.

Mixtures of soybean and cottonseed meals which were tested were unsatisfactory for poults. The mortality rate was high and there was a high incidence of white feathers and of perosis. The absence of pigmentation in the feathers suggested that the mixtures were deficient in lysine.

SUPPLEMENTS TO SOYBEAN AND COTTONSEED MEAL DIETS FOR POULTS AND GROWING TURKEYS, by L. R. Richardson and L. G. Blaylock, department of biochemistry and nutrition, Texas Agricultural Experiment Station, College Station, Tex. Poultry Science, Sept. 1950. 450 Ahnaip St., Menasha, Wis.

Hatchability of Eggs

The unsatisfactory hatchability of eggs of laying birds fed a diet containing 30 percent of cottonseed meal is due primarily to the toxicity

with soybean processors everywhere

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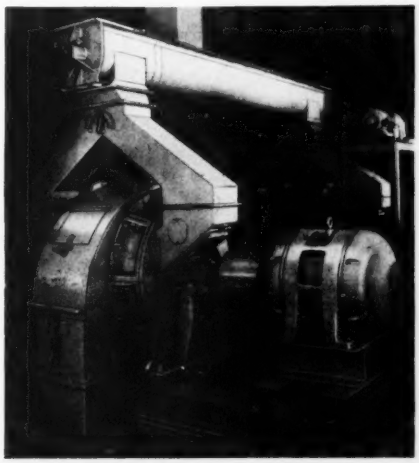

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of gossypol, a compound that occurs in the cottonseed pigment glands, according to findings at the Southwest Poultry Experiment Station, Glendale, Ariz.

The cottonseed pigment glands have also proved to be toxic to chicks as well as to breeding birds.

REPORT OF THE CHIEF OF THE BUREAU OF ANIMAL INDUSTRY, AGRICULTURAL RESEARCH ADMINISTRATION, 1950. U. S. Department of Agriculture, Washington, D. C.

Heating Soybeans

Experimental evidence indicates that moderate heating of raw soybeans increases their digestibility and biologic value and makes the meager amount of cystine and methionine which they contain more available in metabolism. It also shows that raw soybeans contain several factors which inhibit growth and the proteolytic effect of trypsin and which may be modified by heat.

The harmful effects of excessive heating on the nutritive value of soybeans may be due to the formation by certain amino acids of enzyme-resistant linkages, possibly caused by their reaction with the reducing sugars which soybeans contain.

While the nutritive value of the protein of certain other legumes is improved by heating, this is not true of most varieties of peas, or of peanuts. The nutritive value of the protein of cereals is not damaged by cooking with water, but is lowered by toasting, as in processing flaked or puffed cereals.

EFFECT OF HEAT ON THE NUTRITIVE VALUE OF PROTEINS, by Ruth M. Griswold, department of home economics, University of Chicago. Journal of the American Dietetic Association, Chicago, Ill. Feb. 1951.

Johnson Grass

Naphtha (LHH-1) was fairly effective in controlling Johnson grass in soybeans without affecting the yield. Information obtained from greenhouse tests indicates that injury to soybeans from LHH-1 might be minimized if certain precautions are observed.

THE CONTROL OF JOHNSON GRASS IN SOYBEANS WITH LHH-1. By O. A. Leonard, V. C. Harris and F. E. Edwards, Mississippi Agricultural Experiment Station. Proceedings Southern Weed Conference. Biological Abstracts, Philadelphia, Pa. Nov. 1950.

Miscellaneous

ABSTRACTS OF PAPERS PRESENTED AT THE 39TH ANNUAL MEETING OF THE POULTRY SCIENCE ASSOCIATION. Poultry Science, Sept. 1950. 450 Ahnaip St., Menasha, Wis.

Contains a large number of references to vitamin B-12, antibiotics and to soybean oil meal in poultry rations.

MORE . . . BETTER SOYBEANS FOR VIRGINIA. Prepared by extension agronomists, Virginia Polytechnic Institute, Blacksburg, Va.

Outlines methods required for higher soybean yields in Virginia and recommends varieties for eastern Virginia, the Piedmont and west of Blue Ridge.

STABILITY OF CAROTENE AND VITAMIN A IN DRY MIXTURES. By Monroe E. Wall and Edward G. Kelly, Eastern Regional Research Laboratory, Philadelphia 18, Pa. Industrial and Engineering Chemistry, Washington, D. C. May 1951.

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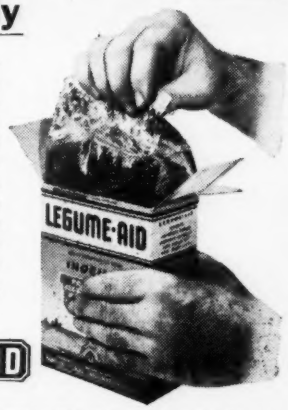

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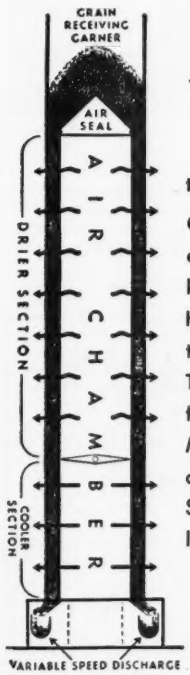

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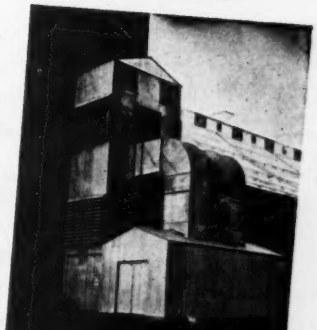

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GRITS and FLAKES... FROM THE WORLD OF SOY

◆ McMillen Feed Mills, division of Central Soya Co., has completed construction of 10 concrete storage bins at its Marion, Ohio, plant. Storage capacity of the soybean processing plant has been boosted by nearly 75 percent. The 10-bin cluster is 100 feet high. It is connected with older storage facilities by a conveyor belt 30 feet above ground level.

◆ Dr. B. F. Daubert, research administrator in the chemistry department of the University of Pittsburgh, will join the research department of Koppers Co., Inc., Aug. 15 as assistant manager of the laboratory section. Dr. Daubert has been in charge of research on the flavor reversion problem of soybean oil at the University of Pittsburgh and has spoken on the subject before an American Soybean Association convention.

◆ Properties and suggested uses for "Arlecin," a soybean lecithin manufactured by Archer-Daniels-Midland Co., Box 839, Minneapolis 2, Minn., are discussed in the company's new technical bulletin No. 88. Paints containing "Arlecin" are compared with those employing aluminum and zinc stearate as antisettling agents.

◆ *Lever Bros. Co. announced wholesale price reductions ranging from 3½ to 11 percent on its major soap, synthetic detergent and shortening products July 13. Lever credited the cuts to a decline in the cost of the principal materials, fats and oils.*

◆ John Zich has been appointed manager of the new products investigation department of Dearborn Motors, national marketing organization for Ford tractors and Dearborn farm equipment. He succeeds J. M. Swetland, now manager of the Washington, D. C., office of Dearborn Motors.

◆ W. H. Geib has been appointed superintendent of the Glidden Co. plant in Reading, Pa. Robert Kempf, formerly of Glidden's Cleveland plant, has been named assistant to Geib. Walter Herner has been transferred from San Francisco to Cleveland to become assistant to G. H. Mutersbaugh, the general superintendent.

◆ A map showing 1950 soybean production by counties for the states of Ohio, Indiana and Illinois has been issued by L. S. Hartley, manager of agricultural development, traffic department, Baltimore & Ohio Railroad, Baltimore 1, Md. Elevators on the B & O Railroad are listed, and also the recommended varieties for the various areas.

◆ *The Glidden Co. will open a new paint distribution center at Long St. and Grant Ave., Columbus, Ohio, Oct. 1. In keeping with its product, the new building will emphasize color harmony in its design.*

TO MIDWEST TERRITORY

W. J. YEAW

W. J. Yeaw has been appointed a sales representative in the midwestern territory, it was announced by Max A. Williams, vice president in charge of sales of American Mineral Spirits Co., Chicago, Ill. Joe Yeaw, who is a native of Champaign, Ill., will cover a portion of the states of Illinois and Missouri and also Indiana and Kentucky for the American Mineral Spirits Co.

This marks further expansion of Amsco's distribution of petroleum solvents in the middlewest, Williams reported.

Joe Yeaw joined Amsco in April after a number of years' experience in the marketing of petroleum products. His headquarters will be American Mineral Spirits Co.'s Chicago office.

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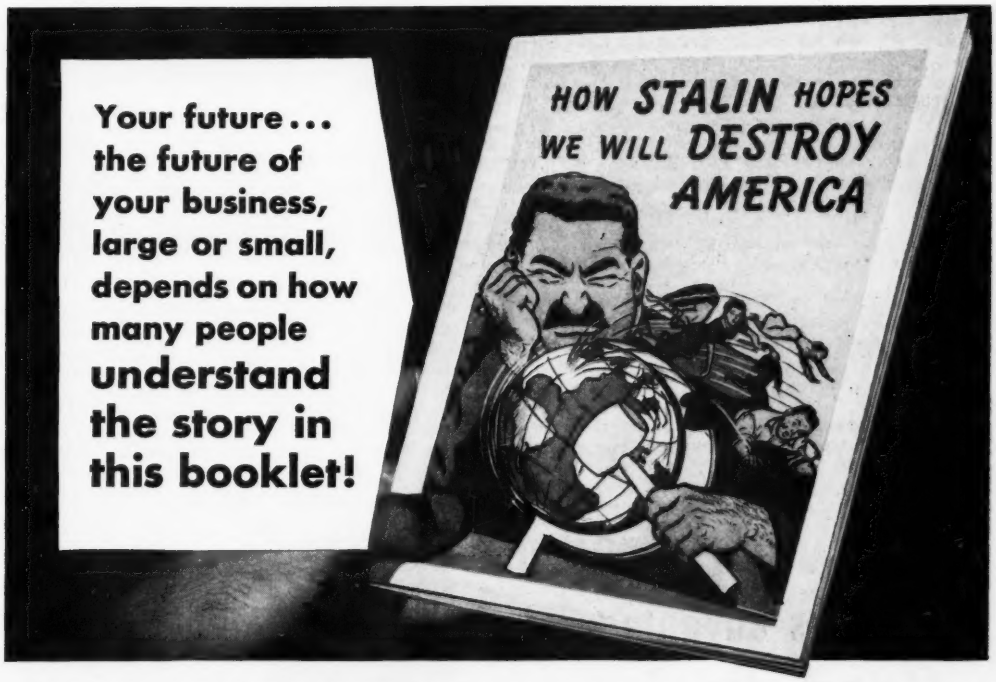
Your future... the future of your business, large or small, depends on how many people understand the story in this booklet!
HOW STALIN HOPES WE WILL DESTROY AMERICA

Businessmen recognize ***inflation*** *as the nation's greatest single threat. But most of us have felt "What can one man—even one business—do to stop it?"*
But there is a way—if enough of us work at it. We can help more people . . . the men and women who work and vote and pay taxes . . . to understand the nature of inflation, its ***causes*** *and* ***cures.*** *Then we will have gone a long way toward eliminating this pending catastrophe.*

ONE TOOL YOU CAN USE: To help us give our own Bemis workers the inflation picture, we used the colorful, new 16-page booklet "How Stalin Hopes We Will Destroy America" produced by Pictorial Media, Inc. The more widely the booklet is used, the more good it will do . . . and it is available for distribution to your workers, too. It follows the time-proven "comic book" technique . . . dramatizes the dangers . . . and shows how all our citizens can help halt inflation before it's too late.

TESTS SHOW IT HELPS WORKERS: To get an impartial judgment of the value of "How Stalin Hopes We Will Destroy America," it was tested in Bemis plants by the Psychological Corporation under the direction of Dr. Henry C. Link, a foremost research authority. Dr. Link says "Those workers exposed to the booklet were found to have a significantly higher appreciation of the recommended ways to stop inflation than did the workers who did not see the booklet. Details of this test are available upon request." And Bemis factory workers make such statements as "Everything it says hit home, but you'd never figure it out for yourself until you read it". . . ."It's told in an interesting way so anyone can understand. My daughter, age ten, understood all of it". . ."In picture form it impresses you more. Most people don't read about it". . ."Had ideas that we wouldn't think about otherwise while we are working away—good book, agree with it—I guess I won't be the only one."

Because we believe this message is growing more urgent every day, Bemis is taking this means to commend to other businesses this weapon against inflation. It is the first of a series of such material that we expect to use.

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FOR EVERY BUSINESS, LARGE OR SMALL: In quantities, it costs only a few cents a copy—$10.00 for 100 copies, down to 3 cents per copy in larger quantities. Single copy free. For full information, write PICTORIAL MEDIA, INC., Attention: Paul Wheeler, 205 E. 42nd ST., NEW YORK 17, N.Y.

◆ *Carl Ander has been named meal sales manager for the Swift & Co. soybean mill at Des Moines, Iowa. He has succeeded Harry Lester, who was transferred to the Swift mill at Fostoria, Ohio.*

◆ All of the major divisions, including the agricultural chemicals division, of the American Cyanamid Co. serving the St. Louis and Midwestern territories have been consolidated under one roof in an office and warehouse at 5025 Pattison Ave., St. Louis, Mo. H. H. Phillips is Midwest area sales manager for the agricultural chemicals division. The firm has also consolidated its several warehouse and office locations in Chicago, Ill.

◆ The Buckeye Cotton Oil Co. has leased all the properties of the Delta Products Co., Evadale, Ark., for a period of five years, effective July 1. These include a solvent mill and refining units for vegetable oils. Buckeye has worked in the Arkansas-Missouri area for a number of years to increase the growing of soybeans.

◆ John K. Hubbard, formerly manager of sales training for the feed and soy operations of Pillsbury Mills, Inc., at Clinton, Iowa, has been transferred to Minneapolis where he will serve as administrative assistant to Clyde Hendrix, feed and soy vice president.

◆ *A new degumming unit has been installed in the soybean processing plant of the North Iowa Cooperative Processing Association at Manley, Iowa.*

◆ "Fine Chemical Products Made from Soybeans" is title of a bulletin describing new cortico-steroids, cortisone and male and female sex hormones issued by the soya products division, Glidden Co., 5161 W. Moffat St., Chicago 39, Ill. Except cortisone, all are made from sterols which Glidden removes from soybeans.

◆ Ballot on reopening the Chicago Board of Trade on Saturdays will be taken by the directors Sept. 5. Saturday closings are mandatory during summer months under present rules.

JOINS McMILLEN

G. RICHARD CHILDS

G. Richard Childs has been appointed assistant in feed research for McMillen Feed Mills, effective July 1, according to a recent company announcement. He will be located in Decatur, Ind., site of McMillen's main feed mill and research laboratories. He will assist W. L. Soldner, associate director of feed research.

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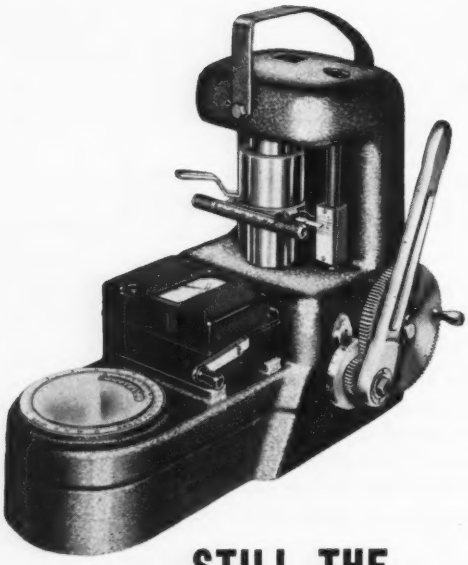

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IN THE MARKETS

Little Change in July Markets

July markets were characterized by a lack of activity. All markets closed for the month substantially the same pricewise as a month earlier. All markets showed some weakness during the middle of July, but later regained the ground lost.

The tail end of another marketing season approached, and the world waited for the outcome of peace negotiations in Korea. Fats and oils markets were brought to a near standstill.

What put strength into the bean market was the fact that processors were running too low on beans to operate at full capacity for the balance of the season. Statisticians pointed out that as of July 1 only 63 million bushels remained to process the last four months, a monthly average of 15.3 million bushels compared to almost 23 million bushels processed on the average each month so far.

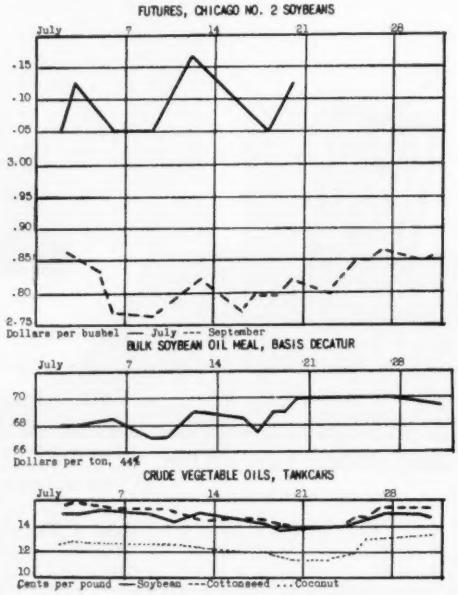
The trade pretty well discounted the government's July 10 crop report, which was about what was expected.

There were reports that Austria bought 1,100 tons of soybeans the first of the month. There was an unexpectedly liberal run of almost 100 cars of soybeans into Chicago the second week in July. This resulted in some weakness.

Weakening factors in the fats and oils markets were the promised big cotton crop and the fact that supplies of soybean oil were almost 50 percent above a year ago. These markets firmed up the latter part of the month, and trading was limited more by offerings than demand.

July No. 2 soybeans at Chicago opened for the month at \$3.05½ and closed at \$3.12½. High was \$3.17 July 12.

September soybean futures opened at \$2.86½ and closed at \$2.85¾. Low was \$2.76½ July 9.



Bulk soybean oil meal, 44% basis Decatur, opened at $68 per ton and closed at $69.50. High was $70 July 20 to 27, and low was $67 July 9 and 10.

Crude soybean oil in tankcars opened for the month at 15c, the high which was also reached July 27-30. Close was 14¾c. Low was 13⅞c July 19-20.

MEMPHIS SOYBEAN OIL MEAL FUTURES JULY 31*

Soybean Meal bulk Decatur (Contract 100 tons.) Oct. flat 56.40; Dec., flat 56.40; Jan., flat 56.40; March, 56.35@56.60; May, flat 56.75.

CHICAGO SOYBEAN OIL FUTURES CLOSINGS JULY 31*

Sept. 14.65, 14.85b-14.60a; Oct. 14.30, 14.25-1423; Nov. 13.90b-14.10a; Dec. 13.95b-14.03a; Jan. 13.95b-14.00a; Mar. 13.85b-.90a; May 13.90, 13.85b-.90a.

NEW YORK SOYBEAN OIL FUTURES CLOSINGS JULY 31*

Old Contract

Sept. '51, 14.50b; Oct., 14.00b; Nov., 13.80b; Jan. '52, 13.90b; July, 13.70b; Sept., 13.50b; Oct., 13.45b.

Sales: Dec., 2; March, 52, 1; May (1. Total sales, 4 contracts, off 16.

New Contract

Sept., 14.50b; Oct., 14.00b; Nov., 13.80b; Dec., 13.75b; Jas. '52, 13.90b; Mar., 13.85b; May, 13.80b; July, 13.70b; Sept., 13.50b; Oct., 13.45b.

No sales.

*Reported by Chicago edition of Wall Street Journal.

FUTURES TRADING AND OPEN CONTRACTS IN SOYBEAN OIL MEAL ON MEMPHIS MERCHANTS EXCHANGE CLEARING ASSOCIATION

(Reported by Members, in tons)

	Volume of trading	Open Contracts		Volume of trading	Open Contracts
June 27	4,300	124,400	July 16	6,300	99,400
June 28	7,200	124,200	July 17	7,900	95,500
June 29	9,500	121,900	July 18	5,600	93,600
July 2	10,300	120,100	July 19	6,500	90,900
July 3	7,600	118,300	July 20	4,900	86,800
July 5	5,500	116,300	July 23	1,100	86,700
July 6	4,200	113,400	July 24	1,400	87,600
July 9	4,000	111,700	July 25	3,200	89,200
July 10	3,200	112,100	July 26	10,200	92,400
July 11	6,200	109,400	July 27	9,900	98,300
July 12	7,400	106,000	Total for 22 days reported	130,000	
July 13	3,500	104,300			

● PROCESSING OPERATIONS. Reported by Bureau of Census, Department of Commerce, for April, May.

PRIMARY PRODUCTS EXCEPT CRUDE OIL, AT CRUDE OIL MILL LOCATIONS: PRODUCTION, SHIPMENTS AND TRANSFERS AND STOCKS, MAY 1951—APRIL 1951

Products	Production		Shipments and transfers		End of month stocks	
	May 1951	April 1951	May 1951	April 1951	May 31, 1951	April 30, 1951
SOYBEAN:						
Cake and meal†	497,100	*511,278	489,106	*480,210	180,168	172,174
Lecithin‡	1,851,814	1,971,235	1,721,241	1,835,315	1,005,121	874,548
Edible soy flour, full fat†	521	213	513	332	73	65
Edible soy flour, other†	4,188	5,421	4,403	5,007	1,390	1,605
Industrial soy flour†	2,105	2,293	2,110	2,277	443	448

* Not shown to avoid disclosure of individual operations.
† Unit of measure in tons. ‡ Unit of measure in pounds.

SOYBEANS: RECEIPTS, CRUSHINGS AND STOCKS AT OIL MILLS, BY STATES, MAY 1951—APRIL 1951

(Tons of 2,000 pounds)

State	Receipts at mills		Crushed or used		Stocks at mills	
	May 1951	April 1951	May 1951	April 1951	May 31, 1951	April 30, 1951
U. S.	284,101	393,075	637,812	*657,529	1,265,766	*1,619,477
Arkansas	(§)	5,528	20,675	*18,532	(§)	*47,285
Illinois	127,104	179,464	256,533	253,802	463,851	593,280
Indiana	15,699	18,910	51,806	54,465	115,272	151,379
Iowa	45,929	66,424	102,523	101,747	195,823	252,417
Kansas	8,356	11,553	10,710	18,576	9,778	12,122
Kentucky	(§)	7,018	16,739	17,362	(§)	53,702
Minnesota	19,578	20,035	24,404	20,454	33,288	38,114
Missouri	(§)	(§)	24,351	21,237	53,549	(§)
Nebraska	(§)	1,880	5,120	5,047	(§)	20,296
N. Carolina	514	(†)	8,500	8,061	8,560	16,546
Ohio	36,226	46,350	68,978	68,872	186,374	219,126
Oklahoma	(§)	(§)	(§)	(§)	(§)	3,251
Texas	(§)	(§)	.....	539	(§)	(§)
All other	30,695	38,754	47,473	68,835	199,271	211,949

* Revised. § Included in "All other" to avoid disclosure of individual operations. † Receipts exceeded by reshipments of beans previously received and held in the State. U. S. receipts are on a net basis, excluding transfers between mills.

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SOYBEAN PRODUCTS: PRODUCTION AND STOCKS AT OIL MILL LOCATIONS, BY STATES, MAY 1951—APRIL 1951

State	Crude oil (thousand pounds)				Cake and meal (tons)			
	Production		Stocks		Production		Stocks	
	May 1951	April 1951	May 31, 1951	April 30, 1951	May 1951	April 1951	May 31, 1951	April 30, 1951
U. S.	209,264	§212,077	43,758	50,975	497,100	§511,278	180,168	172,174
Arkansas	6,469	§5,445	773	1,321	16,352	§14,260	6,114	5,206
Illinois	88,568	87,405	13,628	14,320	192,507	190,170	56,560	57,177
Indiana	16,788	17,853	2,438	4,155	40,793	42,866	(*)	(*)
Iowa	32,654	30,388	5,270	6,330	83,964	83,426	18,925	15,387
Kansas	3,521	5,688	2,038	1,804	8,861	14,869	8,071	5,731
Kentucky	5,902	6,015	1,016	868	12,974	13,250	972	905
Minnesota	7,888	6,564	2,555	2,842	19,230	15,805	4,151	2,900
Missouri	7,089	6,345	2,477	1,554	19,938	17,370	5,244	2,534
Nebraska	1,514	1,528	310	506	4,335	4,271	(*)	(*)
N. Car.	2,474	2,209	745	379	6,830	6,498	14,907	12,203
Ohio	21,825	21,977	4,629	4,851	53,861	54,475	3,087	3,144
Oklahoma	(*)	(*)	(*)	(*)	(*)	(*)	2,367	1,393
Texas	—	141	(*)	(*)	—	422	2,468	2,326
All other	14,572	§20,519	7,879	12,045	37,455	53,596	57,302	63,268

§ Revised. * Included in "All other" to avoid disclosure of individual operations.
Prepared by Bureau of the Census, Industry Division, Chemicals and Wood Products Section.

● **SOYBEAN GLUE.** Consumption of soybean glue by the softwood plywood industry in March was 5,998,000 lbs. compared with 5,225,000 lbs. in February, and 4,018,000 lbs. in Mar. 1950, reports Bureau of the Census.

Consumption of phenolic resin glue in March was 5,000,000 lbs.; and of all glues, 11,783,000 lbs.

Stocks of soybean glue Mar. 31 totaled 3,967,000 lbs.; Feb. 28, 4,227,000 lbs.; and Mar. 31, 1950, 2,000,000 lbs.

Consumption of soybean glue in April was 5,168,000 lbs., compared with 3,727,000 lbs. in Apr. 1950.

Consumption of phenolic resin glue in April was 2,338,000 lbs.; and of all glues, 8,276,000 lbs.

Stocks of soybean glue Apr. 30 totaled 1,590,000 lbs.

● **EXPORTS.** U. S. exports of soybeans and soybean oil for May, as reported by the Office of Foreign Agricultural Relations, U. S. Department of Agriculture:

Soybeans	4,422,840 bu.
Soybean oil (crude)	27,893,866 lbs.
Soybean oil (refined)	18,467,164 lbs.

On a soybean equivalent basis, exports for May amounted to 9,276,527 bushels of soybeans.

● **SHORTENING.** Standard shortening shipments reported by the Institute of Shortening and Edible Oils, Inc., (in pounds):

Week ending June 30	3,575,232
Week ending July 7	3,718,316
Week ending July 14	4,355,038
Week ending July 21	4,462,367

● **STOCKS ON FARMS.** Stocks of soybeans on farms July 1 are estimated at 9.6 million bushels, equivalent to 3.4 percent of the 1950 production, according to the Bureau of Agricultural Economics crop reporting board. This compares with 7.1 million bushels on farms July 1 last year and the 1943-49 average of 8.4 million bushels. Current holdings on farms represent a small marketing surplus although some stocks are still being held to take care of late planting.

Farm stocks are heavily concentrated in the North Central states, with this area accounting for 92 percent of the U. S. total farm stocks. Iowa has the largest stocks, followed in order by Illinois, Indiana, and Ohio.

Disappearance from farms for the period April 1 to July 1 totaled 36.5 million bushels. This was less than for the comparable period in 1950 and 1949 but with those exceptions the highest since 1943. Soybeans for seed accounted for approximately one-half of the disappearance since about 18 million bushels were required to plant the 1951 crop.

SOYBEAN STOCKS ON FARMS JULY 1

State	Average 1943-49	1950	1951	State	Average 1943-49	1950	1951
	Thousand Bushels				Thousand Bushels		
N. Y.	41	9	11	Md.	35	33	30
N. J.	28	16	24	Va.	91	63	63
Pa.	44	30	26	W. Va.	1	1	1
Ohio	1,017	721	929	N. C.	185	169	179
Ind.	1,060	1,211	1,225	S. C.	12	28	53
Ill.	2,420	2,564	2,369	Ga.	2	2	4
Mich.	140	99	148	Ky.	85	88	94
Wis.	37	20	35	Tenn.	21	25	32
Minn.	380	319	492	Ala.	16	5	8
Iowa	1,933	770	2,958	Miss.	49	18	34
Mo.	526	720	411	Ark.	102	58	117
N. Dak.	6	12	9	La.	18	8	11
S. Dak.	26	15	66	Okla.	2	1	4
Nebr.	21	5	61				
Kans.	77	34	162	U. S.	8,421	7,064	9,620
Del.	44	20	64				

● **SOYBEAN STOCKS.** Production and Marketing Administration's commercial grain stock reports.

U. S. Soybeans in Store and Afloat at Domestic Markets (1,000 bu.)	July 2	July 9	July 16	July 23
Atlantic Coast	126	113	100	86
Gulf Coast	1,316	968	965	482
Northwestern and Upper Lake	143	116	77	71
Lower Lake	1,924	1,870	1,725	1,609
East Central	566	575	462	383
West Central, Southwestern & Western	510	461	383	407
Pacific Coast	0		0	0
Total current week	4,585	4,103	3,712	3,038
Total Year ago	6,190	5,566	5,553	5,154
U. S. Soybeans in Store and Afloat at Canadian Markets				
Total current week	375	375	375	199
Total Year ago	100	7	7	7
Total North American Commercial Soybean Stocks				
Current week	4,960	4,478	4,087	3,237
Year ago	6,290	5,573	5,560	5,161

● **SEED IMPORTS.** Imports of soybean seed into the U. S. during the July 1, 1950 to Apr. 30, 1951 period totaled 13,300 pounds, reports U. S. Department of Agriculture. All seed was imported from Canada.

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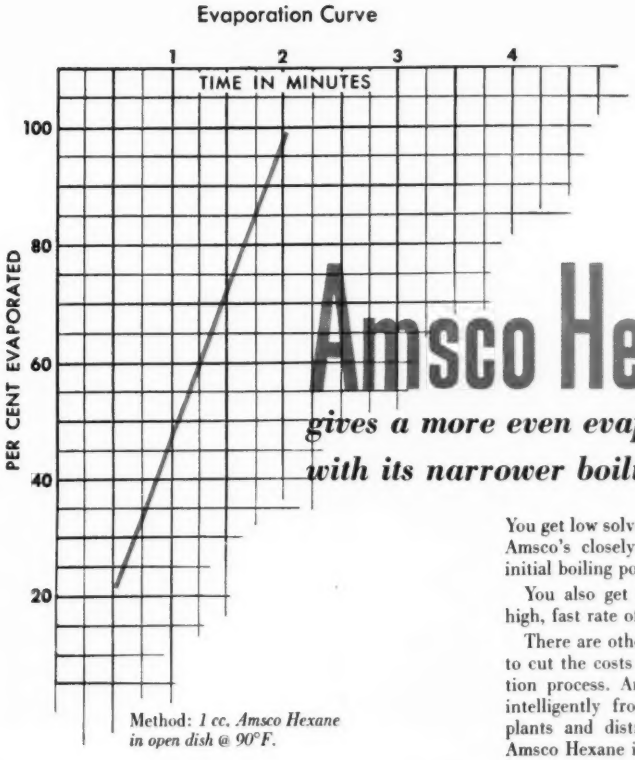

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Specific Gravity (60° F)	.6852
Pounds/gallon (60° F)	5.703
A.S.T.M Distillation	
I.B.P.	151° F.
50%	154° F.
90%	154° F.
Dry Point	156° F.
Vapor Pressure @ 100° F, psia	5.0
Color, Saybolt	30 plus
Corrosion	pass
Doctor Test	sweet
Acidity	not acid

All specifications shown are typical of general control specifications and subject to minor fluctuations.

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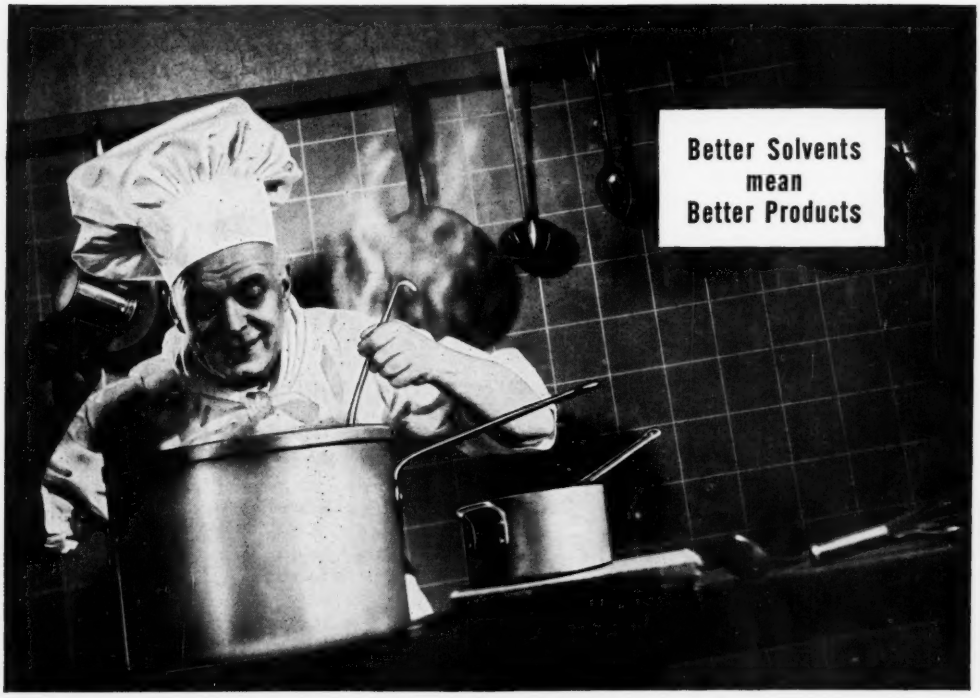

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